

APPENDIX C:
DETAILED STATISTICAL TABLES

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Table C-1. Gross domestic product and GDP implicit price deflators: 1953-99

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Year	GDP		GDP price deflator		Rates of inflation	
	Calendar year	Fiscal year	Calendar year	Fiscal year	Calendar year	Fiscal year
	Billions of current dollars		1987 = 1.00		Percent	
1953.....	370.0	363.4	0.220	0.219	--	
1954.....	370.9	367.4	0.222	0.221	0.9	0.9
1955.....	404.3	383.9	0.229	0.226	3.2	2.3
1956.....	426.2	415.2	0.236	0.234	3.1	3.5
1957.....	448.6	437.2	0.244	0.243	3.4	3.8
1958.....	454.7	447.1	0.249	0.249	2.0	2.5
1959.....	494.2	478.7	0.256	0.255	2.8	2.4
1960.....	513.4	505.9	0.260	0.261	1.6	2.4
1961.....	531.8	516.9	0.263	0.263	1.2	0.8
1962.....	571.6	554.3	0.269	0.268	2.3	1.9
1963.....	603.1	585.0	0.272	0.272	1.1	1.5
1964.....	648.0	626.5	0.277	0.276	1.8	1.5
1965.....	702.7	671.4	0.284	0.283	2.5	2.5
1966.....	769.8	738.6	0.294	0.291	3.5	2.8
1967.....	814.3	791.3	0.303	0.301	3.1	3.4
1968.....	889.3	849.8	0.318	0.312	5.0	3.7
1969.....	959.5	925.6	0.334	0.328	5.0	5.1
1970.....	1,010.7	985.6	0.352	0.346	5.4	5.5
1971.....	1,097.2	1,051.6	0.371	0.363	5.4	4.9
1972.....	1,207.0	1,145.8	0.388	0.382	4.6	5.2
1973.....	1,349.6	1,278.0	0.413	0.402	6.4	5.2
1974.....	1,458.6	1,403.3	0.449	0.433	8.7	7.7
1975.....	1,585.9	1,511.0	0.492	0.476	9.6	9.9
1976.....	1,768.4	1,685.1	0.523	0.512	6.3	7.6
1977.....	1,974.1	1,919.7	0.559	0.554	6.9	8.2
1978.....	2,232.7	2,156.4	0.603	0.596	7.9	7.6
1979.....	2,488.6	2,431.9	0.656	0.647	8.8	8.6
1980.....	2,708.0	2,644.5	0.717	0.706	9.3	9.1
1981.....	3,030.6	2,964.7	0.789	0.778	10.0	10.2
1982.....	3,149.6	3,124.9	0.838	0.836	6.2	7.5
1983.....	3,405.0	3,317.0	0.872	0.870	4.1	4.1
1984.....	3,777.2	3,696.7	0.910	0.909	4.4	4.5
1985.....	4,038.7	3,970.9	0.944	0.943	3.7	3.7
1986.....	4,268.6	4,219.6	0.969	0.971	2.6	3.0
1987.....	4,539.9	4,453.3	1.000	1.000	3.2	3.0

See explanatory information and SOURCE at end of table.

Table C-1. Gross domestic product and GDP implicit price deflators: 1953-99

Year	GDP		GDP price deflator		Rates of inflation	
	Calendar year	Fiscal year	Calendar year	Fiscal year	Calendar year	Fiscal year
	Billions of current dollars		1987 = 1.00		Percent	
1988.....	4,900.4	4,810.0	1.039	1.036	3.9	3.6
1989.....	5,250.8	5,170.1	1.085	1.082	4.4	4.4
1990.....	5,546.1	5,481.5	1.133	1.120	4.4	3.5
1991.....	5,724.8	5,676.4	1.176	1.167	3.8	4.2
1992.....	6,020.2	5,921.5	1.209	1.201	2.8	2.9
1993.....	6,343.3	6,266.1	1.235	1.230	2.2	2.4
1994.....	6,738.4	6,633.6	1.261	1.254	2.1	2.0
1995.....	7,077.5	7,004.5	1.282	1.277	1.7	1.8
1996 (projected).....	7,428.0	7,336.0	1.310	1.302	2.2	2.0
1997 (projected).....	7,904.7	7,707.6	1.338	1.331	2.1	2.2
1998 (projected).....	8,203.3	8,101.4	1.368	1.360	2.2	2.2
1999 (projected).....	8,622.8	8,516.8	1.399	1.391	2.3	2.3

NOTES: Data are projected for 1996-99. Data for 1953-1995 are prior to comprehensive revisions that were published in January 1996 by the U.S. Department of Commerce, Bureau of Economic Analysis. The revised data, however, had not been carried back as far as 1953 at the time of this writing, and thus, the earlier data were used in this report for the purpose of historical consistency. Furthermore, for calculations that could be based on either data set, the similarity between the two data sets implied that the choice of data set would be inconsequential in terms of the relative magnitudes of reported statistical findings. Nevertheless, for interested data users, the most recent, postbenchmark figures on GDP and GDP deflators, now available for 1960 and later years, are provided at the end of this report, in table C-40.

SOURCES: Data for 1953-1995 are from the National Income and Product Accounts. Projections for 1996-1999 consistent with this historical series are from the Office of Management and Budget, *FY 1997 Budget of the United States Government*.

Table C-2. National expenditures for R&D, by performing sectors and sources of funds: 1955-96

Year	United States	Federal Govt. 1/	Industry			Industry FFRDCs	Universities & colleges					U&C FFRDCs	Other nonprofit institutions			Nonprofit FFRDCs			
			Total Used	Sources			Total used	Sources					Total used	Sources					
				Federal Govt.	Industry 2/			Federal Govt.	Nonfed. Govt.	Industry	U&Cs			Non-profits	Federal Govt.		Federal Govt.	Industry	Non-profits
Millions of current dollars																			
1955.....	6,172	905	4,517	2,057	2,460	123	312	169	47	25	41	30	180	127	60	35	32	8	
1956.....	8,364	1,041	6,272	2,995	3,277	333	372	213	53	29	43	34	194	143	68	37	38	9	
1957.....	9,775	1,220	7,324	3,928	3,396	407	410	229	60	34	49	38	240	161	73	37	51	13	
1958.....	10,711	1,374	8,066	4,436	3,630	323	456	254	68	39	53	42	293	184	84	38	62	15	
1959.....	12,357	1,639	9,200	5,217	3,983	418	526	306	76	39	58	47	338	215	106	42	67	21	
1960.....	13,520	1,723	10,032	5,604	4,428	477	646	405	85	40	64	52	360	259	143	48	68	23	
1961.....	14,320	1,878	10,353	5,685	4,668	555	763	500	95	40	70	58	410	288	153	49	86	73	
1962.....	15,392	2,096	11,038	6,009	5,029	426	904	613	106	40	79	66	470	348	185	54	109	110	
1963.....	17,059	2,279	12,216	6,856	5,360	414	1,081	760	118	41	89	73	530	389	215	55	119	150	
1964.....	18,854	2,838	13,049	7,257	5,792	463	1,275	917	132	40	103	83	629	420	253	55	112	180	
1965.....	20,044	3,093	13,812	7,367	6,445	373	1,474	1,073	143	41	124	93	629	433	247	62	124	230	
1966.....	21,846	3,220	15,193	7,977	7,216	355	1,715	1,261	156	42	148	108	630	533	325	70	138	200	
1967.....	23,146	3,396	15,966	7,946	8,020	419	1,921	1,409	164	48	181	119	673	551	332	74	145	220	
1968.....	24,605	3,494	17,014	8,145	8,869	415	2,149	1,572	172	55	218	132	719	584	352	81	151	230	
1969.....	25,629	3,501	17,844	7,987	9,857	464	2,225	1,600	197	60	223	145	725	630	376	93	161	240	
1970.....	26,134	4,079	17,594	7,306	10,288	473	2,335	1,647	219	61	243	165	737	666	399	95	172	250	
1971.....	26,676	4,228	17,829	7,175	10,654	491	2,500	1,724	255	70	274	177	716	702	420	98	184	210	
1972.....	28,476	4,589	19,004	7,469	11,535	548	2,630	1,795	269	74	305	187	753	732	433	101	198	220	
1973.....	30,718	4,762	20,704	7,600	13,104	545	2,884	1,985	295	84	318	202	817	826	510	105	211	180	
1974.....	32,863	4,911	22,239	7,572	14,667	648	3,022	2,032	308	95	368	219	865	978	622	115	241	200	
1975.....	35,213	5,354	23,460	7,878	15,582	727	3,409	2,288	332	113	417	259	987	1,056	655	125	276	220	
1976.....	39,019	5,769	26,107	8,671	17,436	890	3,730	2,512	364	123	446	285	1,147	1,146	695	135	316	230	
1977.....	42,783	6,012	28,863	9,523	19,340	962	4,067	2,726	374	139	514	314	1,384	1,235	727	150	358	260	
1978.....	48,128	6,810	32,222	10,107	22,115	1,082	4,625	3,059	414	170	623	359	1,717	1,352	780	165	407	320	
1979.....	54,939	7,418	37,062	11,354	25,708	1,164	5,366	3,598	472	193	735	368	1,935	1,624	980	180	464	370	
1980.....	62,596	7,632	43,228	12,752	30,476	1,277	6,063	4,098	491	236	835	403	2,246	1,700	1,000	200	500	450	
1981.....	71,870	8,426	50,425	14,997	35,428	1,385	6,848	4,571	546	292	1,004	435	2,486	1,750	1,000	225	525	550	
1982.....	80,018	9,141	57,166	17,061	40,105	1,484	7,323	4,768	616	337	1,111	491	2,479	1,925	1,150	250	525	500	
1983.....	89,144	10,582	63,683	19,095	44,588	1,585	7,882	4,989	626	389	1,302	576	2,737	2,075	1,250	275	550	600	
1984.....	101,167	11,572	73,061	21,657	51,404	1,739	8,620	5,431	690	475	1,411	613	3,150	2,425	1,500	325	600	600	

See explanatory information and SOURCE at end of table.

Table C-2. National expenditures for R&D, by performing sectors and sources of funds: 1955-96

Year	United States	Federal Govt. 1/	Industry			Industry FFRDCs Federal Govt.	Universities & colleges						U&C FFRDCs Federal Govt. 3/	Other nonprofit institutions				Nonprofit FFRDCs Federal Govt.
			Total Used	Sources			Total used	Sources						Total used	Sources			
				Federal Govt.	Industry 2/			Federal Govt.	Nonfed. Govt.	Industry	U&Cs	Non-profits			Federal Govt.	Industry	Non-profits	
Millions of current dollars																		
1985.....	113,819	12,945	82,376	25,333	57,043	1,863	9,687	6,064	752	560	1,617	694	3,523	2,725	1,700	375	650	700
1986.....	119,556	13,535	85,932	26,000	59,932	1,891	10,928	6,712	915	700	1,869	732	3,895	2,825	1,700	425	700	550
1987.....	125,376	13,413	90,160	28,757	61,403	1,995	12,152	7,343	1,023	790	2,168	828	4,206	2,950	1,700	450	800	500
1988.....	132,723	14,115	94,893	28,221	66,672	2,122	13,462	8,193	1,106	872	2,356	935	4,531	3,100	1,700	500	900	500
1989.....	140,836	15,025	99,860	26,359	73,501	2,195	14,976	8,990	1,223	995	2,697	1,071	4,730	3,550	2,000	550	1,000	500
1990.....	151,392	15,849	107,404	25,802	81,602	2,323	16,284	9,636	1,323	1,128	3,006	1,191	4,832	4,100	2,300	650	1,150	600
1991.....	159,997	15,138	114,675	24,095	90,580	2,277	17,579	10,232	1,473	1,205	3,362	1,307	5,078	4,550	2,600	700	1,250	700
1992.....	164,398	15,583	116,757	22,369	94,388	2,353	18,808	11,090	1,491	1,280	3,538	1,409	5,247	4,900	2,800	750	1,350	750
1993.....	165,048	16,663	115,435	20,844	94,591	1,965	19,940	11,956	1,559	1,361	3,578	1,486	5,295	5,000	2,850	750	1,400	750
1994.....	168,085	16,139	117,392	20,261	97,131	2,202	21,081	12,661	1,562	1,430	3,838	1,590	5,271	5,250	2,950	800	1,500	750
1995 (prelim.)...	178,550	16,400	126,600	21,600	105,000	2,100	21,900	13,200	1,600	1,500	4,000	1,600	5,400	5,400	3,050	800	1,550	750
1996 (prelim.)...	184,300	16,200	132,100	21,100	111,000	2,100	22,400	13,400	1,600	1,600	4,200	1,600	5,400	5,300	2,900	850	1,550	800

1/ Total funds used by the Federal Government are from Federal sources.

2/ Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D expenditures.

3/ Includes R&D expenditures of FFRDCs administered by individual universities and colleges and by university consortia. In 1994, 99 percent of total funds used were from Federal sources.

KEY: FFRDC = Federally funded research and development centers
U&C = university and college

NOTES: Data are based on annual reports by performers except for the nonprofit sector; R&D expenditures by nonprofit sector performers have been estimated since 1973 on the basis of a survey conducted in that year. Data are preliminary for 1995 and 1996. As a result of a new sample design for the underlying Survey of Industrial R&D, statistics for 1988-92 were revised and first reported in *National Patterns of R&D Resources: 1994*. These statistics now better reflect R&D performance among firms in the nonmanufacturing industries and small firms in all industries. Industry R&D data are subject to future revisions. See Appendix A: Technical Notes.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry 1994*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures: Fiscal Year 1994*; NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 1994, 1995, and 1996*; NSF/SRS; industry data available in Standard and Poors Compustat; and an independent survey conducted by the Industrial Research Institute.

Table C-3. Sources of funds for research and development, by sector: 1953-96

Year	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/
	Millions of current dollars					Millions of constant 1987 dollars 4/				
1953.....	5,124	2,753	2,245	72	54	23,320	12,540	10,205	329	246
1954.....	5,644	3,132	2,373	80	59	25,453	14,135	10,690	362	266
1955.....	6,172	3,502	2,520	88	62	27,033	15,365	11,006	389	272
1956.....	8,364	4,853	3,343	96	72	35,499	20,616	14,166	410	306
1957.....	9,775	6,110	3,467	109	89	40,093	25,069	14,210	449	365
1958.....	10,711	6,779	3,707	121	104	43,016	27,225	14,888	486	418
1959.....	12,357	8,045	4,064	134	114	48,308	31,461	15,876	525	446
1960.....	13,520	8,735	4,516	149	120	51,960	33,559	17,369	571	461
1961.....	14,320	9,254	4,757	165	144	54,449	35,186	18,087	627	548
1962.....	15,392	9,909	5,123	185	175	57,267	36,881	19,045	690	651
1963.....	17,059	11,204	5,456	207	192	62,717	41,191	20,059	761	706
1964.....	18,854	12,537	5,887	235	195	68,127	45,317	21,253	851	705
1965.....	20,044	13,012	6,548	267	217	70,642	45,877	23,057	943	765
1966.....	21,846	13,968	7,328	304	246	74,501	47,689	24,927	1,045	841
1967.....	23,146	14,395	8,142	345	264	76,521	47,628	26,872	1,146	874
1968.....	24,605	14,927	9,005	390	283	77,759	47,290	28,321	1,250	898
1969.....	25,629	14,893	10,010	420	306	77,087	44,909	29,973	1,280	924
1970.....	26,134	14,891	10,444	462	337	74,597	42,622	29,673	1,335	966
1971.....	26,676	14,964	10,822	529	361	72,345	40,730	29,174	1,457	984
1972.....	28,476	15,807	11,710	574	385	73,714	41,029	30,183	1,503	1,000
1973.....	30,718	16,399	13,293	613	413	74,938	40,208	32,192	1,525	1,013
1974.....	32,863	16,850	14,877	676	460	73,916	38,170	33,141	1,561	1,043
1975.....	35,213	18,109	15,820	749	535	72,237	37,396	32,162	1,574	1,105
1976.....	39,019	19,914	17,694	810	601	75,043	38,464	33,837	1,582	1,161
1977.....	42,783	21,594	19,629	888	672	76,720	38,793	35,117	1,603	1,207
1978.....	48,128	23,875	22,450	1,037	766	80,070	39,819	37,234	1,740	1,277
1979.....	54,939	26,819	26,081	1,207	832	84,061	41,157	39,762	1,866	1,276
1980.....	62,596	29,455	30,912	1,326	903	87,649	41,385	43,118	1,878	1,268
1981.....	71,870	33,415	35,945	1,550	960	91,408	42,629	45,563	1,992	1,225
1982.....	80,018	36,583	40,692	1,727	1,016	95,541	43,702	48,559	2,066	1,214

See explanatory information and SOURCE at end of table.

Table C-3. Sources of funds for research and development, by sector: 1953-96

Year	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/
	Millions of current dollars					Millions of constant 1987 dollars 4/				
1983.....	89,144	40,838	45,252	1,928	1,126	102,285	46,881	51,896	2,216	1,293
1984.....	101,167	45,649	52,204	2,101	1,213	111,201	50,188	57,368	2,311	1,334
1985.....	113,819	52,128	57,978	2,369	1,344	120,600	55,246	61,418	2,512	1,425
1986.....	119,556	54,283	61,057	2,784	1,432	123,321	55,968	63,009	2,867	1,476
1987.....	125,376	57,914	62,643	3,191	1,628	125,376	57,914	62,643	3,191	1,628
1988.....	132,723	59,382	68,044	3,462	1,835	127,831	57,228	65,492	3,342	1,769
1989.....	140,836	59,799	75,046	3,920	2,071	129,892	55,188	69,169	3,623	1,911
1990.....	151,392	61,342	83,380	4,329	2,341	133,999	54,452	73,604	3,865	2,078
1991.....	159,997	60,120	92,485	4,835	2,557	136,300	51,322	78,652	4,143	2,183
1992.....	164,398	60,192	96,418	5,029	2,759	136,197	49,962	79,757	4,187	2,290
1993.....	165,048	60,323	96,702	5,137	2,886	133,780	48,956	78,306	4,176	2,342
1994.....	168,085	60,234	99,361	5,400	3,090	133,483	47,918	78,802	4,306	2,457
1995 (prel.).....	178,550	62,500	107,300	5,600	3,150	139,408	48,859	83,702	4,385	2,462
1996 (prel.).....	184,300	61,900	113,450	5,800	3,150	140,893	47,416	86,611	4,455	2,412

1/ Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D performance.

2/ University and college sources of R&D include university and college R&D performance supported by State and local governments.

3/ Nonprofit sources of R&D include nonprofit performance supported by State and local governments.

4/ See table C-1 for GDP implicit price deflators used to convert current dollars to constant 1987 dollars.

NOTES: Data are preliminary for 1995 and 1996. Industry R&D data are subject to future revisions. See Appendix A: Technical Notes.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry: 1994*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*; NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 1994, 1995 and 1996*; industry data available in Standard and Poors Compustat; and an independent survey conducted by the Industrial Research Institute.

Table C-4. Research and development performance, by sector: 1953-96

Year	Millions of current dollars						Millions of constant 1987 dollars 1/					
	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits
1953.....	5,124	1,010	3,630	255	121	108	23,320	4,612	16,500	1,164	553	491
1954.....	5,644	1,020	4,070	290	141	123	25,453	4,615	18,333	1,312	638	554
1955.....	6,172	905	4,640	312	180	135	27,033	4,004	20,262	1,381	796	590
1956.....	8,364	1,041	6,605	372	194	152	35,499	4,449	27,987	1,590	829	644
1957.....	9,775	1,220	7,731	410	240	174	40,093	5,021	31,684	1,687	988	713
1958.....	10,711	1,374	8,389	456	293	199	43,016	5,518	33,691	1,831	1,177	799
1959.....	12,357	1,639	9,618	526	338	236	48,308	6,427	37,570	2,063	1,325	922
1960.....	13,520	1,723	10,509	646	360	282	51,960	6,602	40,419	2,475	1,379	1,085
1961.....	14,320	1,878	10,908	763	410	361	54,449	7,141	41,475	2,901	1,559	1,373
1962.....	15,392	2,096	11,464	904	470	458	57,267	7,821	42,617	3,373	1,754	1,703
1963.....	17,059	2,279	12,630	1,081	530	539	62,717	8,379	46,434	3,974	1,949	1,982
1964.....	18,854	2,838	13,512	1,275	629	600	68,127	10,283	48,780	4,620	2,279	2,166
1965.....	20,044	3,093	14,185	1,474	629	663	70,642	10,929	49,947	5,208	2,223	2,335
1966.....	21,846	3,220	15,548	1,715	630	733	74,501	11,065	52,884	5,893	2,165	2,493
1967.....	23,146	3,396	16,385	1,921	673	771	76,521	11,282	54,076	6,382	2,236	2,545
1968.....	24,605	3,494	17,429	2,149	719	814	77,759	11,199	54,808	6,888	2,304	2,560
1969.....	25,629	3,501	18,308	2,225	725	870	77,087	10,674	54,814	6,784	2,210	2,605
1970.....	26,134	4,079	18,067	2,335	737	916	74,597	11,789	51,327	6,749	2,130	2,602
1971.....	26,676	4,228	18,320	2,500	716	912	72,345	11,647	49,380	6,887	1,972	2,458
1972.....	28,476	4,589	19,552	2,630	753	952	73,714	12,013	50,392	6,885	1,971	2,454
1973.....	30,718	4,762	21,249	2,884	817	1,006	74,938	11,846	51,450	7,174	2,032	2,436
1974.....	32,863	4,911	22,887	3,022	865	1,178	73,916	11,342	50,973	6,979	1,998	2,624
1975.....	35,213	5,354	24,187	3,409	987	1,276	72,237	11,248	49,161	7,162	2,074	2,593
1976.....	39,019	5,769	26,997	3,730	1,147	1,376	75,043	11,268	51,620	7,285	2,240	2,631
1977.....	42,783	6,012	29,825	4,067	1,384	1,495	76,720	10,852	53,354	7,341	2,498	2,674
1978.....	48,128	6,810	33,304	4,625	1,717	1,672	80,070	11,426	55,231	7,760	2,881	2,773
1979.....	54,939	7,418	38,226	5,366	1,935	1,994	84,061	11,465	58,271	8,294	2,991	3,040
1980.....	62,596	7,632	44,505	6,063	2,246	2,150	87,649	10,810	62,071	8,588	3,181	2,999
1981.....	71,870	8,426	51,810	6,848	2,486	2,300	91,408	10,830	65,665	8,802	3,195	2,915
1982.....	80,018	9,141	58,650	7,323	2,479	2,425	95,541	10,934	69,988	8,760	2,965	2,894

See explanatory information and SOURCE at end of table.

Table C-4. Research and development performance, by sector: 1953-96

Year	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits
	Millions of current dollars						Millions of constant 1987 dollars 1/					
1983.....	89,144	10,582	65,268	7,882	2,737	2,675	102,285	12,163	74,849	9,060	3,146	3,068
1984.....	101,167	11,572	74,800	8,620	3,150	3,025	111,201	12,730	82,198	9,483	3,465	3,324
1985.....	113,819	12,945	84,239	9,687	3,523	3,425	120,600	13,727	89,236	10,273	3,736	3,628
1986.....	119,556	13,535	87,823	10,928	3,895	3,375	123,321	13,939	90,633	11,254	4,011	3,483
1987.....	125,376	13,413	92,155	12,152	4,206	3,450	125,376	13,413	92,155	12,152	4,206	3,450
1988.....	132,723	14,115	97,015	13,462	4,531	3,600	127,831	13,625	93,373	12,994	4,374	3,465
1989.....	140,836	15,025	102,055	14,976	4,730	4,050	129,892	13,886	94,060	13,841	4,372	3,733
1990.....	151,392	15,849	109,727	16,284	4,832	4,700	133,999	14,151	96,846	14,539	4,314	4,148
1991.....	159,997	15,138	116,952	17,579	5,078	5,250	136,300	12,972	99,449	15,063	4,351	4,464
1992.....	164,398	15,583	119,110	18,808	5,247	5,650	136,197	12,975	98,519	15,660	4,369	4,673
1993.....	165,048	16,663	117,400	19,940	5,295	5,750	133,780	13,547	95,061	16,211	4,305	4,656
1994.....	168,085	16,139	119,594	21,081	5,271	6,000	133,483	12,870	94,841	16,811	4,203	4,758
1995 (prel.).....	178,550	16,400	128,700	21,900	5,400	6,150	139,408	12,843	100,390	17,150	4,229	4,797
1996 (prel.).....	184,300	16,200	134,200	22,400	5,400	6,100	140,893	12,442	102,443	17,204	4,147	4,656

1/ See table C-1 for GDP implicit price deflators used to convert current dollars to constant 1987 dollars.

KEY: FFRDC = federally funded research & development center
 U&C = university and college

NOTES: Data are preliminary for 1995 and 1996. Industry R&D data are subject to future revisions. See Appendix A: Technical Notes.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry: 1994*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*; NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 1994, 1995, and 1996*; industry data available in Standard and Poors Compustat; and an independent survey conducted by the Industrial Research Institute.

Table C-5. National basic research expenditures: 1953-96

Year	United States	Federal Govt. 1/	Industry 2/			Universities & colleges					U&C FFRDCs 6/	Other nonprofit institutions 2/			
			Total used	Sources		Total used	Sources 4/					Total used	Sources		
				Federal Govt.	Industry 3/		Federal Govt.	Industry	U&Cs 5/	Non-profits			Federal Govt.	Industry	Non-profits 5/
Millions of current dollars															
1953.....	441	101	151	19	132	110	73	12	10	15	33	46	25	9	12
1954.....	496	102	166	23	143	136	90	14	15	17	39	53	29	11	13
1955.....	547	90	189	27	162	159	103	16	21	19	49	60	33	13	14
1956.....	680	105	253	37	216	200	130	18	30	22	51	71	39	15	17
1957.....	780	122	271	41	230	240	155	21	39	25	65	82	44	15	23
1958.....	877	126	295	43	252	281	178	24	50	29	78	97	53	16	28
1959.....	1,039	172	320	72	248	343	226	24	60	33	92	112	64	18	30
1960.....	1,194	157	376	79	297	433	299	24	72	38	97	131	80	21	30
1961.....	1,405	210	395	81	314	536	382	25	85	44	115	149	90	22	37
1962.....	1,722	249	488	143	345	659	481	25	102	51	136	190	120	24	46
1963.....	1,965	255	522	147	375	814	610	25	121	58	159	215	140	25	50
1964.....	2,289	314	549	165	384	1,003	768	24	144	67	191	232	160	25	47
1965.....	2,555	364	592	186	406	1,138	879	26	164	69	208	253	172	29	52
1966.....	2,814	385	624	173	451	1,303	1,008	27	197	71	227	275	185	32	58
1967.....	3,056	435	629	202	427	1,457	1,124	31	223	79	250	285	190	34	61
1968.....	3,297	432	642	180	462	1,650	1,251	36	276	87	276	297	197	37	63
1969.....	3,441	532	618	160	458	1,711	1,279	39	298	95	275	305	195	43	67
1970.....	3,531	559	602	158	444	1,796	1,296	40	350	110	269	305	189	44	72
1971.....	3,652	566	590	134	456	1,914	1,349	46	400	119	260	322	200	45	77
1972.....	3,801	597	593	130	463	2,022	1,420	53	415	134	244	345	214	47	84
1973.....	3,945	608	631	132	499	2,053	1,454	57	408	134	296	357	218	49	90
1974.....	4,343	696	699	163	536	2,153	1,523	60	431	139	390	405	245	54	106
1975.....	4,738	734	730	157	573	2,410	1,695	72	477	166	439	425	245	60	120
1976.....	5,130	786	819	185	634	2,549	1,841	71	475	162	512	464	265	64	135
1977.....	5,735	914	911	210	701	2,800	2,007	79	527	187	600	510	290	70	150
1978.....	6,649	1,029	1,035	250	785	3,133	2,221	99	605	208	867	585	335	80	170
1979.....	7,568	1,089	1,158	265	893	3,619	2,577	114	711	217	1,022	680	400	85	195
1980.....	8,435	1,182	1,325	290	1,035	4,036	2,861	141	793	241	1,132	760	450	95	215
1981.....	9,606	1,302	1,614	301	1,313	4,595	3,261	171	908	255	1,270	825	495	105	225
1982.....	10,440	1,465	1,904	381	1,523	4,879	3,402	195	998	284	1,327	865	535	115	215

See explanatory information and SOURCE at end of table.

Table C-5. National basic research expenditures: 1953-96

Year	United States	Federal Govt. 1/	Industry 2/			Universities & colleges					U&C FFRDCs 6/	Other nonprofit institutions 2/			
			Total used	Sources		Total used	Sources 4/					Total used	Sources		
				Federal Govt.	Industry 3/		Federal Govt.	Industry	U&Cs 5/	Non-profits			Federal Govt.	Industry	Non-profits 5/
Millions of current dollars															
1983.....	11,645	1,690	2,223	463	1,760	5,303	3,547	236	1,170	350	1,484	945	600	125	220
1984.....	12,933	1,861	2,608	476	2,132	5,734	3,830	283	1,255	366	1,690	1,040	650	150	240
1985.....	14,211	1,923	2,862	489	2,373	6,556	4,343	342	1,447	424	1,765	1,105	675	170	260
1986.....	16,614	2,019	4,047	551	3,496	7,492	4,867	436	1,733	456	1,876	1,180	700	200	280
1987.....	18,025	2,046	4,323	740	3,583	8,393	5,375	496	2,002	520	2,033	1,230	700	210	320
1988.....	19,029	2,050	4,500	993	3,507	8,894	5,678	532	2,113	571	2,245	1,340	750	230	360
1989.....	21,171	2,313	5,216	1,384	3,832	9,790	6,194	598	2,355	643	2,352	1,500	850	250	400
1990.....	22,253	2,295	5,128	1,368	3,760	10,642	6,646	678	2,602	716	2,428	1,760	1,000	300	460
1991.....	26,347	2,392	7,837	1,712	6,125	11,603	7,125	734	2,947	797	2,595	1,920	1,100	320	500
1992.....	26,736	2,338	7,002	1,186	5,816	12,513	7,715	796	3,126	876	2,843	2,040	1,150	350	540
1993.....	27,981	2,662	6,919	958	5,961	13,302	8,397	836	3,156	913	2,938	2,160	1,250	350	560
1994.....	28,796	2,505	7,017	939	6,078	14,096	8,945	875	3,303	973	3,008	2,170	1,200	370	600
1995 (prelim.)..	29,390	2,500	7,000	1,000	6,000	14,700	9,300	900	3,500	1,000	3,000	2,190	1,200	370	620
1996 (prelim.)..	29,760	2,500	6,900	900	6,000	15,100	9,500	1,000	3,600	1,000	3,000	2,260	1,250	390	620

1/ Total funds used by Federal Government are from Federal sources.

2/ Expenditures for FFRDCs administered by industry and nonprofit institutions are included in the totals of the respective sectors.

3/ Industry R&D expenditures include all non-Federal sources of funds.

4/ Distribution by non-Federal sources has been estimated for all years.

5/ Includes R&D funds from State and local government sources.

6/ Includes R&D expenditures of FFRDCs administered by individual universities and colleges and by university consortia.

KEY: FFRDC = federally funded research and development centers

U&C = university and college

NOTES: Data are based on annual reports by performers except for the nonprofit sector; R&D expenditures by nonprofit sector performers have been estimated since 1973 on the basis of a survey conducted in that year. Data are preliminary for 1995 and 1996. The character-of-work estimation procedure for industry's R&D expenditures was revised for 1986 and later years. As a result of a new sample design for the underlying Survey of Industrial Research and Development, statistics for 1988-92 were revised and first reported in *National Patterns of R&D Resources: 1994*. These statistics now better reflect R&D performance among firms in the nonmanufacturing industries and small firms in all industries.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry 1994*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*; NSF/SRS, *Federal Funds for Research and Development; Fiscal Years 1994, 1995, and 1996*.

Table C-6. Sources of funds for basic research, by sector: 1953-96

Page 1 of 2

Year	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/
	Millions of current dollars					Millions of constant 1987 dollars 4/				
1953.....	441	251	153	10	27	2,010	1,145	696	46	123
1954.....	496	283	168	15	30	2,240	1,279	757	68	135
1955.....	547	302	191	21	33	2,406	1,333	835	93	145
1956.....	680	362	249	30	39	2,894	1,544	1,056	128	166
1957.....	780	427	266	39	48	3,204	1,756	1,091	160	197
1958.....	877	478	292	50	57	3,522	1,920	1,173	201	229
1959.....	1,039	626	290	60	63	4,068	2,453	1,133	235	247
1960.....	1,194	712	342	72	68	4,582	2,730	1,315	276	261
1961.....	1,405	878	361	85	81	5,342	3,338	1,373	323	308
1962.....	1,722	1,129	394	102	97	6,416	4,209	1,465	381	361
1963.....	1,965	1,311	425	121	108	7,224	4,820	1,563	445	397
1964.....	2,289	1,598	433	144	114	8,283	5,786	1,563	522	412
1965.....	2,555	1,809	461	164	121	9,018	6,388	1,624	580	427
1966.....	2,814	1,978	510	197	129	9,639	6,785	1,736	677	441
1967.....	3,056	2,201	492	223	140	10,133	7,304	1,624	741	464
1968.....	3,297	2,336	535	276	150	10,511	7,464	1,685	885	477
1969.....	3,441	2,441	540	298	162	10,440	7,423	1,619	909	490
1970.....	3,531	2,471	528	350	182	10,161	7,125	1,502	1,012	522
1971.....	3,652	2,509	547	400	196	10,006	6,892	1,477	1,102	535
1972.....	3,801	2,605	563	415	218	9,912	6,805	1,453	1,086	567
1973.....	3,945	2,708	605	408	224	9,748	6,713	1,469	1,015	551
1974.....	4,343	3,017	650	431	245	9,939	6,934	1,453	995	557
1975.....	4,738	3,270	705	477	286	9,875	6,842	1,438	1,002	593
1976.....	5,130	3,589	769	475	297	9,967	6,991	1,473	928	575
1977.....	5,735	4,021	850	527	337	10,329	7,250	1,522	951	606
1978.....	6,649	4,702	964	605	378	11,124	7,878	1,601	1,015	631
1979.....	7,568	5,353	1,092	711	412	11,658	8,259	1,667	1,099	633
1980.....	8,435	5,915	1,271	793	456	11,902	8,362	1,776	1,123	641
1981.....	9,606	6,629	1,589	908	480	12,303	8,506	2,017	1,167	613
1982.....	10,440	7,110	1,833	998	499	12,480	8,502	2,188	1,194	596

See explanatory information and SOURCE at end of table.

Table C-6. Sources of funds for basic research, by sector: 1953-96

Year	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/
	Millions of current dollars					Millions of constant 1987 dollars 4/				
1983.....	11,645	7,784	2,121	1,170	570	13,377	8,944	2,433	1,345	655
1984.....	12,933	8,507	2,565	1,255	606	14,223	9,357	2,819	1,381	666
1985.....	14,211	9,195	2,885	1,447	684	15,066	9,749	3,057	1,534	725
1986.....	16,614	10,013	4,132	1,733	736	17,121	10,315	4,263	1,785	759
1987.....	18,025	10,894	4,289	2,002	840	18,025	10,894	4,289	2,002	840
1988.....	19,029	11,716	4,269	2,113	931	18,351	11,304	4,110	2,040	898
1989.....	21,171	13,093	4,680	2,355	1,043	19,549	12,095	4,315	2,177	963
1990.....	22,253	13,737	4,738	2,602	1,176	19,798	12,241	4,189	2,323	1,045
1991.....	26,347	14,924	7,179	2,947	1,297	22,513	12,770	6,109	2,525	1,108
1992.....	26,736	15,232	6,962	3,126	1,416	22,212	12,670	5,763	2,603	1,176
1993.....	27,981	16,205	7,147	3,156	1,473	22,719	13,168	5,790	2,566	1,196
1994.....	28,796	16,597	7,323	3,303	1,573	22,923	13,226	5,811	2,634	1,252
1995 (preliminary).....	29,390	17,000	7,270	3,500	1,620	22,987	13,306	5,674	2,741	1,267
1996 (preliminary).....	29,760	17,150	7,390	3,600	1,620	22,814	13,162	5,646	2,765	1,241

1/ Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D performance.

2/ University and college sources of R&D include university and college R&D performance supported by State and local governments.

3/ Nonprofit sources of R&D include nonprofit performance supported by State and local governments.

4/ See table C-1 for GDP implicit price deflators used to convert current dollars to constant 1987 dollars.

NOTE: Data are preliminary for 1995 and 1996.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry: 1994*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*; and NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 1994, 1995, and 1996*.

Table C-7. Basic research performance, by sector: 1953-96

Page 1 of 2

Year	Millions of current dollars						Millions of constant 1987 dollars 1/					
	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits
1953.....	441	101	151	110	33	46	2,010	461	686	502	151	209
1954.....	496	102	166	136	39	53	2,240	462	748	615	176	239
1955.....	547	90	189	159	49	60	2,406	398	825	704	217	262
1956.....	680	105	253	200	51	71	2,894	449	1,072	855	218	301
1957.....	780	122	271	240	65	82	3,204	502	1,111	988	267	336
1958.....	877	126	295	281	78	97	3,522	506	1,185	1,129	313	390
1959.....	1,039	172	320	343	92	112	4,068	675	1,250	1,345	361	438
1960.....	1,194	157	376	433	97	131	4,582	602	1,446	1,659	372	504
1961.....	1,405	210	395	536	115	149	5,342	798	1,502	2,038	437	567
1962.....	1,722	249	488	659	136	190	6,416	929	1,814	2,459	507	706
1963.....	1,965	255	522	814	159	215	7,224	938	1,919	2,993	585	790
1964.....	2,289	314	549	1,003	191	232	8,283	1,138	1,982	3,634	692	838
1965.....	2,555	364	592	1,138	208	253	9,018	1,286	2,085	4,021	735	891
1966.....	2,814	385	624	1,303	227	275	9,639	1,323	2,122	4,478	780	935
1967.....	3,056	435	629	1,457	250	285	10,133	1,445	2,076	4,841	831	941
1968.....	3,297	432	642	1,650	276	297	10,511	1,385	2,019	5,288	885	934
1969.....	3,441	532	618	1,711	275	305	10,440	1,622	1,850	5,216	838	913
1970.....	3,531	559	602	1,796	269	305	10,161	1,616	1,710	5,191	777	866
1971.....	3,652	566	590	1,914	260	322	10,006	1,559	1,590	5,273	716	868
1972.....	3,801	597	593	2,022	244	345	9,912	1,563	1,528	5,293	639	889
1973.....	3,945	608	631	2,053	296	357	9,748	1,512	1,528	5,107	736	864
1974.....	4,343	696	699	2,153	390	405	9,939	1,607	1,557	4,972	901	902
1975.....	4,738	734	730	2,410	439	425	9,875	1,542	1,484	5,063	922	864
1976.....	5,130	786	819	2,549	512	464	9,967	1,535	1,566	4,979	1,000	887
1977.....	5,735	914	911	2,800	600	510	10,329	1,650	1,630	5,054	1,083	912
1978.....	6,649	1,029	1,035	3,133	867	585	11,124	1,727	1,716	5,257	1,455	970
1979.....	7,568	1,089	1,158	3,619	1,022	680	11,658	1,683	1,765	5,594	1,580	1,037
1980.....	8,435	1,182	1,325	4,036	1,132	760	11,902	1,674	1,848	5,717	1,603	1,060
1981.....	9,606	1,302	1,614	4,595	1,270	825	12,303	1,674	2,046	5,906	1,632	1,046
1982.....	10,440	1,465	1,904	4,879	1,327	865	12,480	1,752	2,272	5,836	1,587	1,032

See explanatory information and SOURCE at end of table.

Table C-7. Basic research performance, by sector: 1953-96

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Year	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits
	Millions of current dollars						Millions of constant 1987 dollars 1/					
1983.....	11,645	1,690	2,223	5,303	1,484	945	13,377	1,943	2,549	6,095	1,706	1,084
1984.....	12,933	1,861	2,608	5,734	1,690	1,040	14,223	2,047	2,866	6,308	1,859	1,143
1985.....	14,211	1,923	2,862	6,556	1,765	1,105	15,066	2,039	3,032	6,952	1,872	1,171
1986.....	16,614	2,019	4,047	7,492	1,876	1,180	17,121	2,079	4,176	7,716	1,932	1,218
1987.....	18,025	2,046	4,323	8,393	2,033	1,230	18,025	2,046	4,323	8,393	2,033	1,230
1988.....	19,029	2,050	4,500	8,894	2,245	1,340	18,351	1,979	4,331	8,585	2,167	1,290
1989.....	21,171	2,313	5,216	9,790	2,352	1,500	19,549	2,138	4,807	9,048	2,174	1,382
1990.....	22,253	2,295	5,128	10,642	2,428	1,760	19,798	2,049	4,526	9,502	2,168	1,553
1991.....	26,347	2,392	7,837	11,603	2,595	1,920	22,513	2,050	6,664	9,943	2,224	1,633
1992.....	26,736	2,338	7,002	12,513	2,843	2,040	22,212	1,947	5,792	10,419	2,367	1,687
1993.....	27,981	2,662	6,919	13,302	2,938	2,160	22,719	2,164	5,602	10,815	2,389	1,749
1994.....	28,796	2,505	7,017	14,096	3,008	2,170	22,923	1,998	5,565	11,241	2,399	1,721
1995 (prel.)...	29,390	2,500	7,000	14,700	3,000	2,190	22,987	1,958	5,460	11,511	2,349	1,708
1996 (prel.)...	29,760	2,500	6,900	15,100	3,000	2,260	22,814	1,920	5,267	11,598	2,304	1,725

1/ See table C-1 for GDP implicit price deflators used to convert current dollars to constant 1987 dollars.

KEY: U&C = university and college
FFRDC = federally funded research and development center

NOTE: Data are preliminary for 1995 and 1996.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry: 1994*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*; NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 1994, 1995 and 1996*.

Table C-8. National applied research expenditures: 1953-96

Year	United States	Federal Govt. 1/	Industry 2/			Universities & colleges					U&C FFRDCs 6/	Other nonprofit institutions 2/			
			Total used	Sources		Total used 4/	Sources					Total used	Sources		
				Federal Govt.	Industry 3/		Federal Govt.	Industry	U&Cs 5/	Non-profits			Federal Govt.	Industry	Non-profits 5/
Millions of current dollars															
1953.....	1,279	345	726	288	438	130	57	6	57	10	44	34	13	11	10
1954.....	1,390	349	814	322	492	137	61	7	59	10	51	39	15	13	11
1955.....	1,481	310	928	368	560	136	58	8	60	10	65	42	17	14	11
1956.....	1,889	356	1,268	474	794	147	68	9	59	11	71	47	19	14	14
1957.....	2,374	417	1,670	678	992	145	62	11	61	11	86	56	22	14	20
1958.....	2,699	474	1,911	774	1,137	148	64	12	61	11	102	64	25	14	25
1959.....	2,900	558	1,991	813	1,178	155	67	12	64	12	119	77	35	15	27
1960.....	3,020	595	2,029	833	1,196	179	88	13	66	12	122	95	50	17	28
1961.....	3,065	634	1,977	812	1,165	192	98	13	69	12	135	127	75	17	35
1962.....	3,665	702	2,449	1,011	1,438	205	109	13	70	13	155	154	90	19	45
1963.....	3,742	715	2,457	1,007	1,450	227	128	14	72	13	170	173	105	19	49
1964.....	4,128	903	2,600	1,040	1,560	232	127	14	77	14	202	191	125	19	47
1965.....	4,339	990	2,658	1,038	1,620	279	157	13	88	21	204	208	135	21	52
1966.....	4,601	997	2,843	1,039	1,804	328	194	13	89	32	207	226	145	24	57
1967.....	4,780	1,027	2,915	1,066	1,849	374	222	15	102	35	219	245	160	25	60
1968.....	5,130	1,110	3,124	1,043	2,081	403	253	16	97	37	231	262	172	28	62
1969.....	5,315	1,113	3,287	1,015	2,272	407	246	16	105	40	210	298	200	32	66
1970.....	5,738	1,345	3,427	1,049	2,378	427	267	16	99	45	216	323	220	33	70
1971.....	5,759	1,322	3,415	974	2,441	474	292	19	115	48	210	338	230	34	74
1972.....	6,011	1,387	3,514	952	2,562	524	320	18	140	46	221	365	251	35	79
1973.....	6,598	1,480	3,825	993	2,832	713	461	23	172	57	227	353	234	36	83
1974.....	7,189	1,574	4,288	1,025	3,263	736	438	29	203	66	178	413	280	40	93
1975.....	7,802	1,730	4,570	1,130	3,440	851	515	34	225	77	203	448	300	43	105
1976.....	8,954	2,093	5,112	1,200	3,912	1,016	584	43	282	107	235	498	330	48	120
1977.....	9,570	2,044	5,636	1,325	4,311	1,067	607	46	303	111	290	533	345	53	135
1978.....	10,584	2,191	6,300	1,430	4,870	1,184	644	56	354	130	319	590	385	55	150
1979.....	11,976	2,392	7,225	1,555	5,670	1,310	708	65	412	125	339	710	480	60	170
1980.....	13,610	2,484	8,450	1,900	6,550	1,530	878	78	440	134	421	725	480	65	180
1981.....	16,362	2,732	10,699	2,340	8,359	1,730	946	101	533	150	421	780	515	75	190

See explanatory information and SOURCE at end of table.

Table C-8. National applied research expenditures: 1953-96

Year	United States	Federal Govt. 1/	Industry 2/			Universities & colleges					U&C FFRDCs 6/	Other nonprofit institutions 2/			
			Total used	Sources		Total used 4/	Sources					Total used	Sources		
				Federal Govt.	Industry 3/		Federal Govt.	Industry	U&Cs 5/	Non-profits			Federal Govt.	Industry	Non-profits 5/
Millions of current dollars															
1982.....	18,151	2,729	12,323	2,960	9,363	1,858	959	118	608	173	426	815	540	85	190
1983.....	20,263	3,020	13,927	3,641	10,286	1,989	1,054	126	623	186	452	875	580	95	200
1984.....	22,386	2,903	15,765	4,224	11,541	2,252	1,190	159	699	204	536	930	600	110	220
1985.....	25,327	3,133	18,255	5,347	12,908	2,418	1,262	179	756	221	586	935	575	130	230
1986.....	27,080	3,141	19,760	4,678	15,082	2,628	1,332	215	856	225	561	990	600	140	250
1987.....	27,687	3,392	19,813	4,660	15,153	2,910	1,455	239	966	250	532	1,040	600	150	290
1988.....	29,221	3,288	20,748	4,217	16,531	3,516	1,831	279	1,107	299	529	1,140	650	170	320
1989.....	32,230	3,584	22,691	4,698	17,993	4,055	2,084	327	1,291	353	600	1,300	750	190	360
1990.....	34,748	3,515	24,785	6,353	18,432	4,344	2,157	371	1,424	392	624	1,480	850	220	410
1991.....	38,601	4,063	27,446	6,021	21,425	4,478	2,122	387	1,550	419	924	1,690	1,000	240	450
1992.....	37,805	4,186	26,167	4,983	21,184	4,717	2,338	394	1,551	434	935	1,800	1,050	260	490
1993.....	37,206	4,790	24,686	4,730	19,956	5,008	2,488	430	1,621	469	962	1,760	1,000	260	500
1994.....	36,591	4,983	23,491	4,119	19,372	5,230	2,551	455	1,717	507	977	1,910	1,100	270	540
1995 (Prelim.)...	37,530	5,000	24,220	4,200	20,000	5,450	2,750	500	1,700	500	950	1,930	1,100	270	560
1996 (Prelim.)...	38,750	4,900	25,300	4,300	21,000	5,650	2,850	500	1,800	500	1,000	1,900	1,050	290	560

1/ Total funds used by Federal Government are from Federal sources.

2/ Expenditures for FFRDCs administered by industry and nonprofit institutions are included in the totals of the respective sectors.

3/ Industry R&D expenditures include all non-Federal sources of funds.

4/ Applied research totals have been estimated since 1978. Distribution by non-Federal sources has been estimated for all years.

5/ Includes R&D funds from State and local government sources.

6/ Includes R&D expenditures of FFRDCs administered by individual universities and colleges and by university consortia. Data have been estimated since 1978.

KEY: FFRDC = federally funded research and development centers
U&Cs = university and college

NOTES: Data are based on annual reports by performers except for the nonprofit sector; R&D expenditures by nonprofit sector performers have been estimated since 1973 on the basis of a survey conducted in that year. Data are preliminary for 1995 and 1996. The character-of-work estimation procedure for industry's R&D expenditures was revised for 1986 and later years. As a result of a new sample design for the underlying Survey of Industrial Research and Development, statistics for 1988-92 were revised and first reported in *National Patterns of R&D Resources: 1994*. These statistics now better reflect R&D performance among firms in the nonmanufacturing industries and small firms in all industries.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry 1994*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*; NSF/SRS, *Federal Funds for Research and Development; Fiscal Years 1994, 1995, and 1996*.

Table C-9. Sources of funds for applied research, by sector: 1953-96

Year	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/
	Millions of current dollars					Millions of constant 1987 dollars 4/				
1953.....	1,279	747	455	57	20	5,824	3,405	2,068	260	91
1954.....	1,390	798	512	59	21	6,272	3,604	2,306	267	95
1955.....	1,481	818	582	60	21	6,497	3,597	2,542	265	92
1956.....	1,889	988	817	59	25	8,025	4,204	3,462	252	106
1957.....	2,374	1,265	1,017	61	31	9,740	5,194	4,168	251	127
1958.....	2,699	1,439	1,163	61	36	10,839	5,779	4,671	245	145
1959.....	2,900	1,592	1,205	64	39	11,341	6,230	4,707	251	153
1960.....	3,020	1,688	1,226	66	40	11,602	6,480	4,715	253	154
1961.....	3,065	1,754	1,195	69	47	11,654	6,669	4,544	262	179
1962.....	3,665	2,067	1,470	70	58	13,639	7,697	5,465	261	216
1963.....	3,742	2,125	1,483	72	62	13,757	7,813	5,452	265	228
1964.....	4,128	2,397	1,593	77	61	14,920	8,670	5,751	279	220
1965.....	4,339	2,524	1,654	88	73	15,296	8,904	5,824	311	257
1966.....	4,601	2,582	1,841	89	89	15,703	8,831	6,262	306	304
1967.....	4,780	2,694	1,889	102	95	15,811	8,923	6,235	339	314
1968.....	5,130	2,809	2,125	97	99	16,238	8,930	6,683	311	314
1969.....	5,315	2,784	2,320	105	106	16,008	8,421	6,947	320	320
1970.....	5,738	3,097	2,427	99	115	16,399	8,888	6,896	286	329
1971.....	5,759	3,028	2,494	115	122	15,642	8,270	6,724	317	332
1972.....	6,011	3,131	2,615	140	125	15,579	8,148	6,740	366	324
1973.....	6,598	3,395	2,891	172	140	16,136	8,364	7,002	428	343
1974.....	7,189	3,495	3,332	203	159	16,216	7,964	7,423	469	360
1975.....	7,802	3,878	3,517	225	182	16,048	8,049	7,151	473	375
1976.....	8,954	4,442	4,003	282	227	17,258	8,613	7,656	551	438
1977.....	9,570	4,611	4,410	303	246	17,175	8,296	7,890	547	442
1978.....	10,584	4,969	4,981	354	280	17,624	8,302	8,261	594	467
1979.....	11,976	5,474	5,795	412	295	18,342	8,417	8,835	637	452
1980.....	13,610	6,163	6,693	440	314	19,078	8,678	9,336	623	441
1981.....	16,362	6,954	8,535	533	340	20,825	8,887	10,819	685	434
1982.....	18,151	7,614	9,566	608	363	21,674	9,098	11,416	727	434

See explanatory information and SOURCE at end of table.

Table C-9. Sources of funds for applied research, by sector: 1953-96

Year	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/
	Millions of current dollars					Millions of constant 1987 dollars 4/				
1983.....	20,263	8,747	10,507	623	386	23,252	10,043	12,050	716	443
1984.....	22,386	9,453	11,810	699	424	24,607	10,394	12,978	769	466
1985.....	25,327	10,903	13,217	756	451	26,836	11,555	14,001	802	478
1986.....	27,080	10,312	15,437	856	475	27,933	10,631	15,930	882	490
1987.....	27,687	10,639	15,542	966	540	27,687	10,639	15,542	966	540
1988.....	29,221	10,515	16,980	1,107	619	28,145	10,136	16,343	1,069	597
1989.....	32,230	11,716	18,510	1,291	713	29,726	10,814	17,061	1,193	658
1990.....	34,748	13,499	19,023	1,424	802	30,756	11,979	16,794	1,271	712
1991.....	38,601	14,130	22,052	1,550	869	32,886	12,062	18,754	1,328	742
1992.....	37,805	13,492	21,838	1,551	924	31,324	11,201	18,065	1,291	767
1993.....	37,206	13,970	20,646	1,621	969	30,162	11,339	16,719	1,318	786
1994.....	36,591	13,730	20,097	1,717	1,047	29,067	10,926	15,939	1,369	833
1995 (prel.)....	37,530	14,000	20,770	1,700	1,060	29,309	10,947	16,203	1,331	828
1996 (prel.)....	38,750	14,100	21,790	1,800	1,060	29,634	10,804	16,636	1,382	812

1/ Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D performance.

2/ University and college sources of R&D include university and college R&D performance supported by State and local governments.

3/ Nonprofit sources of R&D include nonprofit performance supported by State and local governments.

4/ See table C-1 for GDP implicit price deflators used to convert current dollars to constant 1987 dollars.

NOTE: Data are preliminary for 1995 and 1996.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry: 1994*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*; and NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 1994, 1995, and 1996*.

Table C-10. Applied research performance, by sector: 1953-96

Year	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits
	Millions of current dollars						Millions of constant 1987 dollars 1/					
1953.....	1,279	345	726	130	44	34	5,824	1,575	3,300	594	201	155
1954.....	1,390	349	814	137	51	39	6,272	1,579	3,667	620	231	176
1955.....	1,481	310	928	136	65	42	6,497	1,372	4,052	602	288	183
1956.....	1,889	356	1,268	147	71	47	8,025	1,521	5,373	628	303	199
1957.....	2,374	417	1,670	145	86	56	9,740	1,716	6,844	597	354	230
1958.....	2,699	474	1,911	148	102	64	10,839	1,904	7,675	594	410	257
1959.....	2,900	558	1,991	155	119	77	11,341	2,188	7,777	608	467	301
1960.....	3,020	595	2,029	179	122	95	11,602	2,280	7,804	686	467	365
1961.....	3,065	634	1,977	192	135	127	11,654	2,411	7,517	730	513	483
1962.....	3,665	702	2,449	205	155	154	13,639	2,619	9,104	765	578	572
1963.....	3,742	715	2,457	227	170	173	13,757	2,629	9,033	835	625	636
1964.....	4,128	903	2,600	232	202	191	14,920	3,272	9,386	841	732	690
1965.....	4,339	990	2,658	279	204	208	15,296	3,498	9,359	986	721	732
1966.....	4,601	997	2,843	328	207	226	15,703	3,426	9,670	1,127	711	769
1967.....	4,780	1,027	2,915	374	219	245	15,811	3,412	9,620	1,243	728	809
1968.....	5,130	1,110	3,124	403	231	262	16,238	3,558	9,824	1,292	740	824
1969.....	5,315	1,113	3,287	407	210	298	16,008	3,393	9,841	1,241	640	892
1970.....	5,738	1,345	3,427	427	216	323	16,399	3,887	9,736	1,234	624	918
1971.....	5,759	1,322	3,415	474	210	338	15,642	3,642	9,205	1,306	579	911
1972.....	6,011	1,387	3,514	524	221	365	15,579	3,631	9,057	1,372	579	941
1973.....	6,598	1,480	3,825	713	227	353	16,136	3,682	9,262	1,774	565	855
1974.....	7,189	1,574	4,288	736	178	413	16,216	3,635	9,550	1,700	411	920
1975.....	7,802	1,730	4,570	851	203	448	16,048	3,634	9,289	1,788	426	911
1976.....	8,954	2,093	5,112	1,016	235	498	17,258	4,088	9,774	1,984	459	952
1977.....	9,570	2,044	5,636	1,067	290	533	17,175	3,690	10,082	1,926	523	953
1978.....	10,584	2,191	6,300	1,184	319	590	17,624	3,676	10,448	1,987	535	978
1979.....	11,976	2,392	7,225	1,310	339	710	18,342	3,697	11,014	2,025	524	1,082
1980.....	13,610	2,484	8,450	1,530	421	725	19,078	3,518	11,785	2,167	596	1,011
1981.....	16,362	2,732	10,699	1,730	421	780	20,825	3,512	13,560	2,224	541	989
1982.....	18,151	2,729	12,323	1,858	426	815	21,674	3,264	14,705	2,222	510	973

See explanatory information and SOURCE at end of table.

Table C-10. Applied research performance, by sector: 1953-96

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Year	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits
	Millions of current dollars						Millions of constant 1987 dollars 1/					
1983.....	20,263	3,020	13,927	1,989	452	875	23,252	3,471	15,971	2,286	520	1,003
1984.....	22,386	2,903	15,765	2,252	536	930	24,607	3,194	17,324	2,477	590	1,022
1985.....	25,327	3,133	18,255	2,418	586	935	26,836	3,322	19,338	2,564	621	990
1986.....	27,080	3,141	19,760	2,628	561	990	27,933	3,235	20,392	2,706	578	1,022
1987.....	27,687	3,392	19,813	2,910	532	1,040	27,687	3,392	19,813	2,910	532	1,040
1988.....	29,221	3,288	20,748	3,516	529	1,140	28,145	3,174	19,969	3,394	511	1,097
1989.....	32,230	3,584	22,691	4,055	600	1,300	29,726	3,312	20,913	3,748	555	1,198
1990.....	34,748	3,515	24,785	4,344	624	1,480	30,756	3,138	21,876	3,879	557	1,306
1991.....	38,601	4,063	27,446	4,478	924	1,690	32,886	3,482	23,338	3,837	792	1,437
1992.....	37,805	4,186	26,167	4,717	935	1,800	31,324	3,485	21,644	3,928	779	1,489
1993.....	37,206	4,790	24,686	5,008	962	1,760	30,162	3,894	19,989	4,072	782	1,425
1994.....	36,591	4,983	23,491	5,230	977	1,910	29,067	3,974	18,629	4,171	779	1,515
1995 (prel.).....	37,530	5,000	24,200	5,450	950	1,930	29,309	3,915	18,877	4,268	744	1,505
1996 (prel.).....	38,750	4,900	25,300	5,650	1,000	1,900	29,634	3,763	19,313	4,339	768	1,450

1/ See table C-1 for GDP implicit price deflators used to convert current dollars to constant 1987 dollars.

KEY: FFRDC = federally funded research and development center
U&C = university and college

NOTE: Data are preliminary for 1995 and 1996.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry: 1994*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*; and NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 1994, 1995, and 1996*.

Table C-11. National development expenditures: 1953-96

Year	United States	Federal Govt. 1/	Industry 2/			Universities & colleges					U&C FFRDCs 6/	Other nonprofit institutions 2/			
			Total used	Sources		Total used 4/	Sources					Total used	Sources		
				Federal Govt.	Industry 3/		Federal Govt.	Industry	U&Cs 5/	Non-profits			Federal Govt.	Industry	Non-profits
Millions of current dollars															
1953.....	3,404	564	2,753	1,123	1,630	15	8	1	5	1	44	28	16	6	6
1954.....	3,758	569	3,090	1,405	1,685	17	9	1	6	1	51	31	17	7	7
1955.....	4,144	505	3,523	1,785	1,738	17	8	1	7	1	66	33	18	8	7
1956.....	5,795	580	5,084	2,817	2,267	25	15	2	7	1	72	34	19	8	7
1957.....	6,621	681	5,790	3,616	2,174	25	12	2	9	2	89	36	20	8	8
1958.....	7,135	774	6,183	3,942	2,241	27	12	3	10	2	113	38	21	8	9
1959.....	8,418	909	7,307	4,750	2,557	28	13	3	10	2	127	47	28	9	10
1960.....	9,306	971	8,104	5,169	2,935	34	18	3	11	2	141	56	36	10	10
1961.....	9,850	1,034	8,536	5,347	3,189	35	20	2	11	2	160	85	61	10	14
1962.....	10,005	1,145	8,527	5,281	3,246	40	23	2	13	2	179	114	85	11	18
1963.....	11,352	1,309	9,651	6,116	3,535	40	22	2	14	2	201	151	120	11	20
1964.....	12,437	1,621	10,363	6,515	3,848	40	22	2	14	2	236	177	148	11	18
1965.....	13,150	1,739	10,935	6,516	4,419	57	37	2	15	3	217	202	170	12	20
1966.....	14,431	1,838	12,081	7,120	4,961	84	59	2	18	5	196	232	195	14	23
1967.....	15,310	1,934	12,841	7,097	5,744	90	63	2	20	5	204	241	202	15	24
1968.....	16,178	1,952	13,663	7,337	6,326	96	68	3	17	8	212	255	213	16	26
1969.....	16,873	1,856	14,403	7,276	7,127	107	75	5	17	10	240	267	221	18	28
1970.....	16,865	2,175	14,038	6,572	7,466	112	84	5	13	10	252	288	240	18	30
1971.....	17,265	2,340	14,315	6,558	7,757	112	83	5	14	10	246	252	200	19	33
1972.....	18,664	2,605	15,445	6,935	8,510	84	55	3	19	7	288	242	188	19	35
1973.....	20,175	2,674	16,793	7,020	9,773	118	70	4	33	11	294	296	238	20	38
1974.....	21,331	2,641	17,900	7,032	10,868	133	71	6	42	14	297	360	297	21	42
1975.....	22,673	2,890	18,887	7,318	11,569	148	78	7	47	16	345	403	330	22	51
1976.....	24,934	2,890	21,066	8,176	12,890	164	87	9	52	16	400	414	330	23	61
1977.....	27,478	3,054	23,278	8,950	14,328	200	112	14	58	16	494	452	352	27	73
1978.....	30,895	3,590	25,969	9,509	16,460	308	194	15	78	21	531	497	380	30	87
1979.....	35,395	3,937	29,843	10,698	19,145	437	313	14	84	26	574	604	470	35	99
1980.....	40,551	3,966	34,730	11,839	22,891	497	359	17	93	28	693	665	520	40	105
1981.....	45,902	4,392	39,497	13,741	25,756	523	365	20	108	30	795	695	540	45	110
1982.....	51,427	4,947	44,423	15,204	29,219	586	407	24	121	34	726	745	575	50	120

See explanatory information and SOURCE at end of table.

Table C-11. National development expenditures: 1953-96

Year	United States	Federal Govt. 1/	Industry 2/			Universities & colleges					U&C FFRDCs 6/	Other nonprofit institutions 2/			
			Total used	Sources		Total used 4/	Sources					Total used	Sources		
				Federal Govt.	Industry 3/		Federal Govt.	Industry	U&Cs 5/	Non-profits			Federal Govt.	Industry	Non-profits
Millions of current dollars															
1983.....	57,236	5,872	49,118	16,576	32,542	590	388	27	135	40	801	855	670	55	130
1984.....	65,848	6,808	56,427	18,696	37,731	634	411	33	147	43	924	1,055	850	65	140
1985.....	74,281	7,889	63,122	21,360	41,762	713	459	39	166	49	1,172	1,385	1,150	75	160
1986.....	75,862	8,375	64,016	22,662	41,354	808	513	49	195	51	1,458	1,205	950	85	170
1987.....	79,664	7,975	68,019	25,352	42,667	849	513	55	223	58	1,641	1,180	900	90	190
1988.....	84,472	8,776	71,767	25,133	46,634	1,052	684	61	242	65	1,757	1,120	800	100	220
1989.....	87,435	9,128	74,148	22,472	51,676	1,131	712	70	274	75	1,778	1,250	900	110	240
1990.....	94,391	10,039	79,814	20,404	59,410	1,298	833	79	303	83	1,780	1,460	1,050	130	280
1991.....	95,050	8,684	81,669	18,639	63,030	1,498	985	84	338	91	1,559	1,640	1,200	140	300
1992.....	99,857	9,060	85,940	18,555	67,385	1,578	1,037	90	352	99	1,469	1,810	1,350	140	320
1993.....	99,863	9,212	85,796	17,118	68,678	1,630	1,071	95	360	104	1,395	1,830	1,350	140	340
1994.....	102,700	8,651	89,088	17,405	71,683	1,755	1,165	100	380	110	1,286	1,920	1,400	160	360
1995 (prelim.)..	111,630	8,900	97,500	18,500	79,000	1,750	1,150	100	400	100	1,450	2,030	1,500	160	370
1996 (prelim.)..	115,790	8,800	102,000	18,000	84,000	1,650	1,050	100	400	100	1,400	1,940	1,400	170	370

1/ Total funds used by Federal Government are from Federal sources.

2/ Expenditures for FFRDCs administered by industry and nonprofit institutions are included in the totals of the respective sectors.

3/ Industry R&D expenditures include all non-Federal sources of funds.

4/ Development totals have been estimated since 1978. Distribution by non-Federal sources has been estimated for all years.

5/ Includes R&D funds from State and local government sources.

6/ Includes R&D expenditures of FFRDCs administered by individual universities and colleges and by university consortia. Data have been estimated since 1978.

KEY: FFRDC = federally funded research and development center
U&C = university and college

NOTES: Data are based on annual reports by performers except for the nonprofit sector; R&D expenditures by nonprofit sector performers have been estimated since 1973 on the basis of a survey conducted in that year. Data are preliminary for 1995 and 1996. The character-of-work estimation procedure for industry's R&D expenditures was revised for 1986 and later years. As a result of a new sample design for the underlying Survey of Industrial Research and Development, statistics for 1988-92 were revised and first reported in *National Patterns of R&D Resources: 1994*. These statistics now better reflect R&D performance among firms in the nonmanufacturing industries and small firms in all industries. Industry R&D data are subject to future revisions. See Appendix A: Technical Notes.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry 1994*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*; NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 1994, 1995, and 1996*.

Table C-12. Sources of funds for development, by sector: 1953-96

Page 1 of 2

Year	United	Federal	Industry 1/	Universities	Non-	United	Federal	Industry 1/	Universities	Non-
	States	Govt.		& colleges 2/	profits 3/	States	Govt.		& colleges 2/	profits 3/
	Millions of current dollars					Millions of constant 1987 dollars 4/				
1953.....	3,404	1,755	1,637	5	7	15,486	7,990	7,441	23	32
1954.....	3,758	2,051	1,693	6	8	16,941	9,252	7,626	27	36
1955.....	4,144	2,382	1,747	7	8	18,130	10,435	7,629	31	35
1956.....	5,795	3,503	2,277	7	8	24,580	14,867	9,648	30	34
1957.....	6,621	4,418	2,184	9	10	27,149	18,120	8,951	37	41
1958.....	7,135	4,862	2,252	10	11	28,655	19,526	9,044	40	44
1959.....	8,418	5,827	2,569	10	12	32,899	22,778	10,035	39	47
1960.....	9,306	6,335	2,948	11	12	35,775	24,349	11,338	42	46
1961.....	9,850	6,622	3,201	11	16	37,452	25,179	12,171	42	61
1962.....	10,005	6,713	3,259	13	20	37,212	24,974	12,115	49	74
1963.....	11,352	7,768	3,548	14	22	41,735	28,559	13,044	51	81
1964.....	12,437	8,542	3,861	14	20	44,924	30,862	13,939	51	72
1965.....	13,150	8,679	4,433	15	23	46,328	30,585	15,609	53	81
1966.....	14,431	9,408	4,977	18	28	49,159	32,073	16,929	62	95
1967.....	15,310	9,500	5,761	20	29	50,577	31,401	19,013	66	96
1968.....	16,178	9,782	6,345	17	34	51,011	30,896	19,953	54	107
1969.....	16,873	9,668	7,150	17	38	50,639	29,065	21,407	52	114
1970.....	16,865	9,323	7,489	13	40	48,037	26,609	21,276	38	114
1971.....	17,265	9,427	7,781	14	43	46,697	25,568	20,973	39	116
1972.....	18,664	10,071	8,532	19	42	48,224	26,076	21,990	50	109
1973.....	20,175	10,296	9,797	33	49	49,054	25,131	23,722	82	119
1974.....	21,331	10,338	10,895	42	56	47,761	23,272	24,266	97	126
1975.....	22,673	10,961	11,598	47	67	46,314	22,505	23,574	99	137
1976.....	24,934	11,883	12,922	52	77	47,817	22,860	24,708	102	148
1977.....	27,478	12,962	14,369	58	89	49,216	23,247	25,705	105	159
1978.....	30,895	14,204	16,505	78	108	51,322	23,640	27,372	131	180
1979.....	35,395	15,992	19,194	84	125	54,061	24,480	29,259	130	191
1980.....	40,551	17,377	22,948	93	133	56,669	24,345	32,006	132	186
1981.....	45,902	19,832	25,821	109	140	58,280	25,235	32,727	140	178
1982.....	51,427	21,859	29,293	121	154	61,387	26,102	34,956	145	184

See explanatory information and SOURCE at end of table.

Table C-12. Sources of funds for development, by sector: 1953-96

Year	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/	United States	Federal Govt.	Industry 1/	Universities & colleges 2/	Non-profits 3/
	Millions of current dollars					Millions of constant 1987 dollars 4/				
1983.....	57,236	24,307	32,624	135	170	65,657	27,894	37,413	155	195
1984.....	65,848	27,689	37,829	147	183	72,371	30,437	41,570	162	201
1985.....	74,281	32,030	41,876	166	209	78,698	33,941	44,360	176	221
1986.....	75,862	33,958	41,488	195	221	78,266	35,022	42,815	201	228
1987.....	79,664	36,381	42,812	223	248	79,664	36,381	42,812	223	248
1988.....	84,472	37,150	46,795	242	285	81,334	35,787	45,039	234	274
1989.....	87,435	34,990	51,856	274	315	80,616	32,279	47,794	253	291
1990.....	94,391	34,106	59,619	303	363	83,445	30,232	52,621	271	321
1991.....	95,050	31,067	63,254	338	391	80,902	26,491	53,788	290	333
1992.....	99,857	31,471	67,615	352	419	82,661	26,094	55,927	293	347
1993.....	99,863	30,146	68,913	360	444	80,901	24,448	55,800	293	360
1994.....	102,700	29,907	71,943	380	470	81,495	23,766	57,053	303	373
1995 (preliminary).....	111,630	31,500	79,260	400	470	87,112	24,606	61,826	313	367
1996 (preliminary).....	115,790	30,650	84,270	400	470	88,445	23,450	64,329	307	359

1/ Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D performance.

2/ University and college sources of R&D include university and college R&D performance supported by State and local governments.

3/ Nonprofit sources of R&D include nonprofit performance supported by State and local governments.

4/ See table C-1 for GDP implicit price deflators used to convert current dollars to constant 1987 dollars.

NOTES: Data are preliminary for 1995 and 1996. Industry R&D data are subject to future revisions. See Appendix A: Technical Notes.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry: 1994*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*, and NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 1994, 1995, and 1996*.

Table C-13. Development performance, by sector: 1953-96

Page 1 of 2

Year	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits
	Millions of current dollars						Millions of constant 1987 dollars 1/					
1953.....	3,404	564	2,753	15	44	28	15,486	2,575	12,514	68	201	127
1954.....	3,758	569	3,090	17	51	31	16,941	2,575	13,919	77	231	140
1955.....	4,144	505	3,523	17	66	33	18,130	2,235	15,384	75	292	144
1956.....	5,795	580	5,084	25	72	34	24,580	2,479	21,542	107	308	144
1957.....	6,621	681	5,790	25	89	36	27,149	2,802	23,730	103	366	148
1958.....	7,135	774	6,183	27	113	38	28,655	3,108	24,831	108	454	153
1959.....	8,418	909	7,307	28	127	47	32,899	3,565	28,543	110	498	184
1960.....	9,306	971	8,104	34	141	56	35,775	3,720	31,169	130	540	215
1961.....	9,850	1,034	8,536	35	160	85	37,452	3,932	32,456	133	608	323
1962.....	10,005	1,145	8,527	40	179	114	37,212	4,272	31,699	149	668	424
1963.....	11,352	1,309	9,651	40	201	151	41,735	4,813	35,482	147	739	555
1964.....	12,437	1,621	10,363	40	236	177	44,924	5,873	37,412	145	855	639
1965.....	13,150	1,739	10,935	57	217	202	46,328	6,145	38,504	201	767	711
1966.....	14,431	1,838	12,081	84	196	232	49,159	6,316	41,092	289	674	789
1967.....	15,310	1,934	12,841	90	204	241	50,577	6,425	42,380	299	678	795
1968.....	16,178	1,952	13,663	96	212	255	51,011	6,256	42,965	308	679	802
1969.....	16,873	1,856	14,403	107	240	267	50,639	5,659	43,123	326	732	799
1970.....	16,865	2,175	14,038	112	252	288	48,037	6,286	39,881	324	728	818
1971.....	17,265	2,340	14,315	112	246	252	46,697	6,446	38,585	309	678	679
1972.....	18,664	2,605	15,445	84	288	242	48,224	6,819	39,807	220	754	624
1973.....	20,175	2,674	16,793	118	294	296	49,054	6,652	40,661	294	731	717
1974.....	21,331	2,641	17,900	133	297	360	47,761	6,099	39,866	307	686	802
1975.....	22,673	2,890	18,887	148	345	403	46,314	6,071	38,388	311	725	819
1976.....	24,934	2,890	21,066	164	400	414	47,817	5,645	40,279	320	781	792
1977.....	27,478	3,054	23,278	200	494	452	49,216	5,513	41,642	361	892	809
1978.....	30,895	3,590	25,969	308	531	497	51,322	6,023	43,066	517	891	824
1979.....	35,395	3,937	29,843	437	574	604	54,061	6,085	45,492	675	887	921
1980.....	40,551	3,966	34,730	497	693	665	56,669	5,618	48,438	704	982	927
1981.....	45,902	4,392	39,497	523	795	695	58,280	5,645	50,060	672	1,022	881
1982.....	51,427	4,947	44,423	586	726	745	61,387	5,917	53,011	701	868	889

See explanatory information and SOURCE at end of table.

Table C-13. Development performance, by sector: 1953-96

Page 2 of 2

Year	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits	United States	Federal Govt.	Industry	Universities & colleges	U&C FFRDCs	Non-profits
	Millions of current dollars						Millions of constant 1987 dollars ^{1/}					
1983.....	57,236	5,872	49,118	590	801	855	65,657	6,749	56,328	678	921	981
1984.....	65,848	6,808	56,427	634	924	1,055	72,371	7,490	62,008	697	1,017	1,159
1985.....	74,281	7,889	63,122	713	1,172	1,385	78,698	8,366	66,867	756	1,243	1,467
1986.....	75,862	8,375	64,016	808	1,458	1,205	78,266	8,625	66,064	832	1,502	1,244
1987.....	79,664	7,975	68,019	849	1,641	1,180	79,664	7,975	68,019	849	1,641	1,180
1988.....	84,472	8,776	71,767	1,052	1,757	1,120	81,334	8,471	69,073	1,015	1,696	1,078
1989.....	87,435	9,128	74,148	1,131	1,778	1,250	80,616	8,436	68,339	1,045	1,643	1,152
1990.....	94,391	10,039	79,814	1,298	1,780	1,460	83,445	8,963	70,445	1,159	1,589	1,289
1991.....	95,050	8,684	81,669	1,498	1,559	1,640	80,902	7,441	69,446	1,284	1,336	1,395
1992.....	99,857	9,060	85,940	1,578	1,469	1,810	82,661	7,544	71,084	1,314	1,223	1,497
1993.....	99,863	9,212	85,796	1,630	1,395	1,830	80,901	7,489	69,470	1,325	1,134	1,482
1994.....	102,700	8,651	89,088	1,755	1,286	1,920	81,495	6,899	70,649	1,400	1,026	1,523
1995 (prel.).....	111,630	8,900	97,500	1,750	1,450	2,030	87,112	6,969	76,053	1,370	1,135	1,583
1996 (prel.).....	115,790	8,800	102,000	1,650	1,400	1,940	88,445	6,759	77,863	1,267	1,075	1,481

^{1/} See table C-1 for GDP implicit price deflators used to convert current dollars to constant 1987 dollars.

KEY: U&C = university and college
FFRDC = federally funded research and development center

NOTES: Data are preliminary for 1995 and 1996. Industry R&D data are subject to future revisions. See Appendix A: Technical Notes.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry: 1994*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*; and NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 1994, 1995, and 1996*.

Table C-14. Trends in Federal and non-Federal R&D expenditures: 1953-96

Page 1 of 2

Year	Federal				Non-Federal
	Total Federal	Defense related	Space related	Civilian related	
	Percent				
1953.....	53.7	48.0	1.0	4.7	46.3
1954.....	55.5	49.0	1.0	5.5	44.5
1955.....	56.7	48.2	1.0	7.6	43.3
1956.....	58.0	49.2	1.0	7.8	42.0
1957.....	62.5	52.9	0.9	8.7	37.5
1958.....	63.3	52.6	1.1	9.6	36.7
1959.....	65.1	54.0	2.5	8.5	34.9
1960.....	64.6	52.2	3.2	9.2	35.4
1961.....	64.6	50.0	5.5	9.1	35.4
1962.....	64.4	48.8	6.6	9.1	35.6
1963.....	65.7	41.4	13.5	10.9	34.3
1964.....	66.5	36.8	18.9	10.8	33.5
1965.....	64.9	33.1	20.8	11.1	35.1
1966.....	63.9	32.3	19.5	12.1	36.1
1967.....	62.2	35.2	14.3	12.7	37.8
1968.....	60.7	34.7	13.6	12.4	39.3
1969.....	58.1	34.4	11.4	12.3	41.9
1970.....	57.0	33.3	10.3	13.3	43.0
1971.....	56.1	32.5	9.5	14.0	43.9
1972.....	55.5	32.8	7.9	14.9	44.5
1973.....	53.4	31.9	6.7	14.8	46.6
1974.....	51.3	28.9	6.9	15.5	48.7
1975.....	51.4	27.4	7.4	16.6	48.6
1976.....	51.0	26.7	7.6	16.7	49.0
1977.....	50.5	26.9	6.6	17.0	49.5
1978.....	49.6	25.7	6.2	17.8	50.4
1979.....	48.8	24.6	5.5	18.6	51.2
1980.....	47.1	24.1	5.3	17.7	52.9
1981.....	46.5	24.3	5.2	17.0	53.5
1982.....	45.7	25.9	4.9	14.9	54.3
1983.....	45.8	27.5	4.2	14.1	54.2
1984.....	45.1	28.5	3.0	13.7	54.9
1985.....	45.8	29.8	3.1	12.9	54.2
1986.....	45.4	31.5	3.0	10.9	54.6
1987.....	46.2	31.7	3.1	11.4	53.8
1988.....	44.7	30.4	3.4	11.0	55.3
1989.....	42.5	27.8	3.7	10.9	57.5
1990.....	40.5	25.4	4.2	11.0	59.5
1991.....	37.6	22.4	4.5	10.7	62.4
1992.....	36.6	21.4	4.3	10.9	63.4

See explanatory information and SOURCE at end of table.

Table C-14. Trends in Federal and non-Federal R&D expenditures: 1953-96

Year	Federal				Non-Federal
	Total Federal	Defense related	Space related	Civilian related	
	Percent				
1993.....	36.5	21.6	4.4	10.6	63.5
1994.....	35.8	19.8	4.4	11.6	64.2
1995 (preliminary).....	35.0	19.2	4.3	11.6	65.0
1996 (preliminary).....	33.6	17.9	4.0	11.7	66.4

NOTES: Data are preliminary for 1995 and 1996. Details may not sum to totals because of rounding.

SOURCE: National Science Foundation/SRS

Table C-15. National expenditures for R&D as a percentage of gross domestic product, by source of funds: 1953-96

Page 1 of 2

Year	Total R&D/GDP	Federal R&D/GDP	Non-Federal R&D/GDP
1953.....	1.38	0.74	0.64
1954.....	1.52	0.84	0.68
1955.....	1.53	0.87	0.66
1956.....	1.96	1.14	0.82
1957.....	2.18	1.36	0.82
1958.....	2.36	1.49	0.86
1959.....	2.50	1.63	0.87
1960.....	2.63	1.70	0.93
1961.....	2.69	1.74	0.95
1962.....	2.69	1.73	0.96
1963.....	2.83	1.86	0.97
1964.....	2.91	1.93	0.97
1965.....	2.85	1.85	1.00
1966.....	2.84	1.81	1.02
1967.....	2.84	1.77	1.07
1968.....	2.77	1.68	1.09
1969.....	2.67	1.55	1.12
1970.....	2.59	1.47	1.11
1971.....	2.43	1.36	1.07
1972.....	2.36	1.31	1.05
1973.....	2.28	1.22	1.06
1974.....	2.25	1.16	1.10
1975.....	2.22	1.14	1.08
1976.....	2.21	1.13	1.08
1977.....	2.17	1.09	1.07
1978.....	2.16	1.07	1.09
1979.....	2.21	1.08	1.13
1980.....	2.31	1.09	1.22
1981.....	2.37	1.10	1.27
1982.....	2.54	1.16	1.38
1983.....	2.62	1.20	1.42
1984.....	2.68	1.21	1.47
1985.....	2.82	1.29	1.53
1986.....	2.80	1.27	1.53
1987.....	2.76	1.28	1.49
1988.....	2.71	1.21	1.50
1989.....	2.68	1.14	1.54
1990.....	2.73	1.11	1.62
1991.....	2.79	1.05	1.74
1992.....	2.73	1.00	1.73

See explanatory information and SOURCE at end of table.

Table C-15. National expenditures for R&D as a percentage of gross domestic product, by source of funds: 1953-96

Year	Total R&D/GDP	Federal R&D/GDP	Non-Federal R&D/GDP
1993.....	2.60	0.95	1.65
1994.....	2.49	0.89	1.60
1995 (preliminary).....	2.52	0.88	1.64
1996 (preliminary).....	2.48	0.88	1.65

NOTE: Data are preliminary for 1995 and 1996.

SOURCES: National Science Foundation/SRS and U.S. Department of Commerce.

Table C-16. Geographic distribution of U.S. R&D expenditures, by performer and source of funds: 1993

Geographic area	United States	Federal Govt. 1/	Industry			Universities & colleges						U&C FFRDCs 5/	Non-profits 6/
			Total used 2/	Sources		Total used 4/	Sources						
				Federal Govt.	Industry 3/		Federal Govt.	Non-Fed. govt.	Industry	U&C	All other		
Millions of current dollars													
Total, U.S.....	165,048	16,663	117,400	22,809	94,388	19,940	11,956	1,559	1,361	3,578	1,486	5,295	5,750
New England.....	13,674	730	10,092	2,311	7,781	1,736	1,172	39	133	214	178	355	761
Connecticut.....	2,809	53	2,373	419	1,954	365	221	10	18	81	35	0	18
Maine.....	114	13	59	D	D	25	9	2	4	10	0	0	17
Massachusetts.....	9,486	384	6,952	1,878	5,074	1,094	772	15	98	80	128	355	701
New Hampshire.....	438	89	248	D	D	99	68	6	5	12	9	0	2
Rhode Island.....	484	185	176	12	164	103	72	3	3	23	2	0	20
Vermont.....	343	6	284	D	D	50	32	3	5	8	3	0	3
Middle Atlantic.....	28,434	994	23,693	2,912	20,781	2,938	1,896	132	225	446	238	445	364
New Jersey.....	9,181	509	8,162	378	7,784	374	167	36	26	116	28	116	20
New York.....	10,974	131	8,820	1,392	7,428	1,545	1,052	76	88	180	149	293	185
Pennsylvania.....	8,278	354	6,711	1,142	5,569	1,019	677	20	112	149	61	35	159
South Atlantic.....	22,994	8,034	10,692	3,078	7,614	3,605	2,224	307	281	643	166	63	600
Delaware.....	1,247	12	1,181	24	1,157	53	26	4	5	14	4	0	1
D.C.....	2,543	1,713	540	21	519	145	100	1	10	18	15	0	145
Florida.....	3,526	608	2,425	970	1,455	489	268	32	41	120	29	0	4
Georgia.....	1,577	159	860	63	797	547	273	39	52	168	15	0	11
Maryland.....	7,423	4,010	2,076	1,287	789	1,128	842	90	48	116	32	0	209
North Carolina.....	2,745	174	1,929	16	1,913	605	378	74	70	64	19	0	37
South Carolina.....	713	38	495	D	D	178	73	16	14	53	22	0	2
Virginia.....	2,941	1,227	1,087	595	492	405	228	46	36	69	26	35	187
West Virginia.....	280	93	100	D	D	55	32	2	4	14	3	28	4
Southeast.....	3,935	1,099	1,966	865	1,101	787	452	86	63	134	51	11	72
Alabama.....	1,967	833	833	406	427	281	161	27	24	48	21	0	20
Kentucky.....	429	16	289	7	282	122	56	6	14	41	6	0	2
Mississippi.....	325	163	52	D	D	106	55	22	10	11	8	0	4
Tennessee.....	1,214	87	792	D	D	278	180	31	16	34	16	11	46

See explanatory information and SOURCE at end of table.

Table C-16. Geographic distribution of U.S. R&D expenditures, by performer and source of funds: 1993

Geographic area	United States	Federal Govt. 1/	Industry			Universities & colleges						U&C FFRDCs 5/	Non-profits 6/
			Total used 2/	Sources		Total used 4/	Sources						
				Federal Govt.	Industry 3/		Federal Govt.	Non-Fed. govt.	Industry	U&C	All other		
Millions of current dollars													
Southwest.....	8,269	586	5,547	658	4,889	1,889	861	268	123	436	201	5	242
Arkansas.....	301	41	185	D	D	74	25	24	7	15	3	0	1
Louisiana.....	470	43	170	D	D	255	96	64	17	61	17	0	2
Oklahoma.....	533	34	311	2	309	173	56	22	10	67	16	0	15
Texas.....	6,966	468	4,882	640	4,242	1,387	683	158	90	293	164	5	224
Great Lakes.....	28,364	877	23,830	1,642	22,188	2,798	1,573	220	181	559	264	649	210
Illinois.....	6,778	83	5,242	236	5,006	758	425	46	45	178	64	649	46
Indiana.....	2,560	77	2,177	D	D	303	168	21	23	66	26	0	3
Michigan.....	10,778	96	9,924	153	9,771	700	377	40	47	172	64	0	58
Ohio.....	6,398	583	5,144	1,030	4,114	594	348	46	48	89	62	0	77
Wisconsin.....	1,851	38	1,343	D	D	444	255	68	19	54	48	0	26
Plains.....	6,519	198	4,816	816	4,000	1,342	643	194	90	331	84	37	126
Iowa.....	902	30	533	D	D	299	145	38	18	81	17	37	3
Kansas.....	463	12	292	47	245	154	60	37	8	44	6	0	5
Minnesota.....	2,922	40	2,458	378	2,080	332	175	50	22	65	21	0	92
Missouri.....	1,789	51	1,375	D	D	345	191	19	31	78	25	0	18
Nebraska.....	295	25	128	14	114	136	38	40	9	36	13	0	6
North Dakota.....	91	27	9	D	D	54	25	2	2	24	2	0	1
South Dakota.....	58	13	22	D	D	22	9	10	1	2	1	0	1
Mountain.....	8,820	1,161	5,013	1,651	3,362	1,233	718	81	89	273	72	1,223	189
Arizona.....	1,608	206	1,042	298	744	311	150	6	19	113	23	40	9
Colorado.....	2,864	170	2,111	252	1,859	331	222	18	24	42	26	99	153
Idaho.....	477	37	391	D	D	49	17	13	7	11	1	0	0
Montana.....	85	22	14	D	D	48	21	9	3	14	0	0	1
Nevada.....	218	71	67	D	D	79	43	4	5	25	1	0	1
New Mexico.....	2,752	504	962	D	D	187	113	14	19	29	12	1,084	15
Utah.....	753	141	411	51	360	196	137	13	9	29	8	0	5
Wyoming.....	63	10	15	D	D	33	15	4	2	11	1	0	5

See explanatory information and SOURCE at end of table.

Table C-16. Geographic distribution of U.S. R&D expenditures, by performer and source of funds: 1993

Geographic area	United States	Federal Govt. 1/	Industry			Universities & colleges						U&C FFRDCs 5/	Non-profits 6/
			Total used 2/	Sources		Total used 4/	Sources						
				Federal Govt.	Industry 3/		Federal Govt.	Non-Fed. govt.	Industry	U&C	All other		
Millions of current dollars													
Pacific.....	40,427	2,039	31,971	8,393	23,578	3,174	2,160	186	146	475	207	2,499	744
Alaska.....	130	48	14	D	D	67	42	3	5	17	0	0	1
California.....	33,721	1,785	26,541	7,463	19,078	2,380	1,630	112	99	368	171	2,499	516
Hawaii.....	380	42	255	D	D	74	41	27	0	3	2	0	9
Oregon.....	774	51	471	32	439	226	135	30	9	34	18	0	26
Washington.....	5,422	113	4,689	891	3,798	428	312	14	34	52	16	0	192
Other/unknown7.....	3,612	945	-220	483	-906	437	257	45	30	67	24	8	2,442

1/ Total funds used by the Federal Government are from Federal sources.

2/ Industry totals include R&D performed by industry-administered FFRDCs. Totals for the following States are more than 50 percent imputed: Delaware, D.C., Kansas, Louisiana, Missouri, Washington, and West Virginia. Totals for the following States were based entirely on estimates by NSF: Maine, Montana, New Mexico, and Vermont.

3/ Industry R&D support to industry performers include all nonfederal sources of funds.

4/ For universities and colleges, funds distributed by State and region are for doctorate-granting institutions only.

5/ Includes R&D expenditures of university-associated FFRDCs, of which 99 percent were from federal sources.

6/ For the nonprofit sector, funds distributed by state and region include only federal obligations to organizations in this sector, including associated FFRDCs. Estimated nonfederal support to the nonprofit sector is included in "other/unknown."

7/ Negative figures for industry reflect revisions in industry aggregate R&D totals that could not be allocated to individual states.

KEY: D = withheld to avoid disclosing operations of individual companies
 FFRDC = federally funded research and development center
 U&C = university and college

NOTE: Industry R&D data are subject to future revisions. See Appendix A: Technical Notes.

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry 1993*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*; and NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 1993, 1994, and 1995*.

Table C-17. Total R&D and GSP by state: 1993

Page 1 of 2

Rank in total R&D	State	Millions of current dollars		Percent R&D/GSP	Rank in R&D/GSP	Percent of US R&D	Cumulative percent of US R&D
		Total R&D	GSP 1/				
	Total, U.S.....	165,048	6,163,552	2.7	--	100.0	100.0
1	California.....	33,721	786,408	4.3	7	20.4	20.4
2	New York.....	10,974	504,037	2.2	19	6.6	27.1
3	Michigan.....	10,778	213,354	5.1	5	6.5	33.6
4	Massachusetts.....	9,486	167,140	5.7	4	5.7	39.4
5	New Jersey.....	9,181	229,104	4.0	9	5.6	44.9
6	Pennsylvania.....	8,278	273,046	3.0	11	5.0	49.9
7	Maryland.....	7,423	120,020	6.2	2	4.5	54.4
8	Texas.....	6,966	430,973	1.6	28	4.2	58.7
9	Illinois.....	6,778	303,341	2.2	17	4.1	62.8
10	Ohio.....	6,398	249,133	2.6	15	3.9	66.6
11	Washington.....	5,422	129,569	4.2	8	3.3	69.9
12	Florida.....	3,526	282,481	1.2	31	2.1	72.1
13	Virginia.....	2,941	160,411	1.8	24	1.8	73.8
14	Minnesota.....	2,922	111,951	2.6	14	1.8	75.6
15	Colorado.....	2,864	88,632	3.2	10	1.7	77.3
16	Connecticut.....	2,809	100,316	2.8	13	1.7	79.0
17	New Mexico.....	2,752	33,791	8.1	1	1.7	80.7
18	North Carolina.....	2,745	169,153	1.6	27	1.7	82.4
19	Indiana.....	2,560	126,443	2.0	22	1.6	83.9
20	D.C.....	2,543	41,590	6.1	3	1.5	85.5
21	Alabama.....	1,967	80,775	2.4	16	1.2	86.7
22	Wisconsin.....	1,851	113,142	1.6	26	1.1	87.8
23	Missouri.....	1,789	114,458	1.6	29	1.1	88.9
24	Arizona.....	1,608	78,153	2.1	21	1.0	89.8
25	Georgia.....	1,577	162,110	1.0	36	1.0	90.8
26	Delaware.....	1,247	25,555	4.9	6	0.8	91.6
27	Tennessee.....	1,214	114,257	1.1	34	0.7	92.3
28	Iowa.....	902	58,702	1.5	30	0.5	92.8
29	Oregon.....	774	66,354	1.2	32	0.5	93.3
30	Utah.....	753	37,607	2.0	23	0.5	93.8
31	South Carolina.....	713	72,771	1.0	35	0.4	94.2
32	Oklahoma.....	533	61,482	0.9	38	0.3	94.5
33	Rhode Island.....	484	22,116	2.2	18	0.3	94.8
34	Idaho.....	477	22,916	2.1	20	0.3	95.1
35	Louisiana.....	470	95,219	0.5	48	0.3	95.4
36	Kansas.....	463	56,832	0.8	39	0.3	95.7
37	New Hampshire.....	438	26,312	1.7	25	0.3	95.9
38	Kentucky.....	429	78,044	0.5	44	0.3	96.2
39	Hawaii.....	380	34,078	1.1	33	0.2	96.4
40	Vermont.....	343	12,210	2.8	12	0.2	96.6

See explanatory information and SOURCE at end of table.

Table C-17. Total R&D and GSP by state: 1993

Rank in total R&D	State	Millions of current dollars		Percent R&D/GSP	Rank in R&D/GSP	Percent of US R&D	Cummulative percent of US R&D
		Total R&D	GSP 1/				
41	Mississippi.....	325	46,171	0.7	42	0.2	96.8
42	Arkansas.....	301	44,726	0.7	43	0.2	97.0
43	Nebraska.....	295	38,226	0.8	40	0.2	97.2
44	West Virginia.....	280	31,550	0.9	37	0.2	97.4
45	Nevada.....	218	39,683	0.5	45	0.1	97.5
46	Alaska.....	130	25,716	0.5	47	0.1	97.6
47	Maine.....	114	24,710	0.5	50	0.1	97.6
48	North Dakota.....	91	12,478	0.7	41	0.1	97.7
49	Montana.....	85	16,756	0.5	46	0.1	97.7
50	Wyoming.....	63	13,569	0.5	49	0.0	97.8
51	South Dakota.....	58	15,981	0.4	51	0.0	97.8
	Other/unknown.....	3,612					100.0

1/ The Bureau of Economic Analysis has prepared GSP data through 1992. GSP data for 1993 were estimated here based on measures of annual, state-wide, rates of change in employee compensation and proprietors' income.

KEY: GSP = gross state product

SOURCES: National Science Foundation/SRS. Data were derived from NSF/SRS, *Research and Development in Industry 1993*; NSF/SRS, *Academic Science and Engineering: R&D Expenditures, Fiscal Year 1994*; and NSF/SRS, *Federal Funds for Research and Development; Fiscal Years 1993, 1994, and 1995*; and Department of Commerce, Bureau of Economic Analysis.

Table C-18. Scientists and engineers primarily engaged in research and development activities, by sector of employment: 1985-93

	In Thousands								
	1985	1986	1987	1988	1989	1990	1991	1992	1993
United States R&D S&Es, total.....	801.9	NA	877.8	NA	924.2	NA	960.4	NA	962.7
Total, all industries 1/.....	646.8	683.4	702.2	715.6	733.1	758.5	776.4	772.0	764.5
Food and tobacco products (20,21).....	(S)	(S)	(S)	(S)	(S)	(S)	9.6	9.7	9.9
Petroleum refining and extraction (13,29).....	12.0	10.2	9.7	10.1	10.9	11.3	11.5	11.3	10.6
Chemicals and allied products (28).....	73.5	75.5	75.5	77.1	79.4	81.0	83.6	86.1	90.7
Machinery (35).....	85.7	92.8	97.1	99.4	106.9	111.5	104.5	98.4	83.3
Electrical equipment (36).....	115.6	124.2	131.5	127.5	113.9	100.6	93.9	90.6	90.8
Transportation equipment (37).....	169.8	183.3	187.8	186.8	177.8	160.0	145.4	144.3	136.7
Professional and scientific instruments (38).....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)
Nonmanufacturing industries.....	71.0	85.8	99.2	(S)	(S)	(S)	(S)	199.6	193.7
All other industries.....	119.4	111.9	101.6	214.7	244.3	294.3	327.9	132.3	149.0
Federal Government, total 2/.....	52.1	51.6	54.3	54.2	58.8	59.4	58.3	61.8	60.0
Research.....	22.3	21.2	22.4	22.4	24.6	24.7	25.2	25.8	25.1
Development.....	29.7	30.4	31.9	31.7	34.2	34.6	33.1	36.0	34.9
Educational institutions, total 3/.....	95.2	NA	112.4	NA	123.1	NA	117.1	NA	128.0
Basic research.....	43.6		48.4		52.7		46.3		49.5
Applied research.....	15.7		24.1		26.0		23.3		31.0
Development/design.....	1.4		0.8		0.9		1.1		2.7
Management/administration of R&D.....	4.0		3.9		3.9		3.9		0.0 6/
Nonprofit organizations, total 3/.....	7.8	NA	8.9	NA	9.2	NA	8.7	NA	10.2
Basic research.....	3.4		3.4		3.8		3.2		3.6
Applied reserach.....	2.2		3.4		3.2		3.2		5.3
Development/design.....	0.5		0.4		0.5		0.6		1.2
Management/administration of R&D.....	1.7		1.7		1.7		1.7		0.0 6/
Science and engineering graduate students 4/.....	30.5	33.0	35.1	37.3	39.5	40.3	42.5	43.8	44.9
Total United States labor force 5/.....	117,167	119,540	121,602	123,378	125,557	126,424	126,867	128,548	129,525
R&D S&Es per 10,000 labor force.....	68.4	NA	72.2	NA	73.6	NA	75.7	NA	74.3

1/ Industry counts are for the average number of full-time equivalent R&D S&Es.

2/ Federal Government counts are for the number of S&Es whose work activity is classified as research or development.

3/ S&E counts for educational institutions and nonprofit organizations are for the number of employed doctoral S&Es who report their primary work activity as research, development or management of R&D.

4/ Number of full-time equivalent graduate students with research assistantships averaging an estimated 50 percent of their time engaged in R&D activities.

5/ Total labor force of the noninstitutional population, age 16 years and over.

6/ This category of primary work activity was not included in the 1993 data.

KEY: NA = data not available
 S = data have been withheld due to imputation of 50 percent or more
 S&Es = scientists and engineers

NOTE: The methodology for calculating preliminary R&D scientists and engineers was changed for 1985 and later years. These data are not strictly comparable with calculations previously published.

SOURCE: NSF/SRS, Survey of Industrial Research and Development; Survey of Doctorate Recipients; Survey of Graduate Students and Postdoctorates in Science and Engineering; U.S. Office of Personnel Management; and Bureau of Labor Statistics, *Employment and Earnings* (annual).

Table C-19. Number of employed doctoral scientists and engineers, by field of doctorate and primary work activity: 1993

Field of doctorate	Total	Research & development					Non-research & development			
		Total	Basic research	Applied research	Development	Design 1/	Teaching	Management, sales, and administration	Computer applications	Prof. services/ other
Thousands										
Total.....	462.87	191.12	64.46	92.96	23.27	10.44	101.22	81.59	18.68	70.25
Sciences.....	387.74	154.04	60.75	73.87	14.53	4.89	89.07	65.95	12.58	66.10
Computer and mathematical sciences.....	27.94	8.32	3.46	3.69	0.52	0.65	11.59	3.46	3.48	1.10
Computer and information sciences.....	5.14	1.92	0.67	1.00	0.14	0.11	1.36	0.60	1.16	0.10
Mathematical sciences.....	22.80	6.40	2.79	2.69	0.38	0.54	10.23	2.85	2.32	1.00
Life and related sciences.....	124.58	63.93	31.62	27.46	3.95	0.90	21.83	21.12	1.90	15.80
Agricultural and food sciences.....	15.10	8.00	1.49	5.34	1.03	0.15	2.03	3.35	0.34	1.37
Biological and health sciences.....	105.63	54.41	29.92	21.00	2.79	0.70	19.11	16.56	1.49	14.07
Environmental sciences.....	3.85	1.51	0.21	1.12	0.13	0.05	0.70	1.21	0.07	0.36
Physical and related sciences.....	98.53	52.13	15.79	25.74	8.12	2.49	16.58	18.43	4.89	6.50
Chemistry, except biochemistry.....	51.76	28.12	6.68	15.29	5.41	0.75	7.89	10.63	1.39	3.72
Geology and oceanography.....	12.50	6.36	2.72	3.13	0.36	0.15	2.71	2.07	0.56	0.81
Physics and astronomy.....	33.15	17.12	6.21	7.04	2.31	1.56	5.77	5.52	2.90	1.85
Other physical sciences (incl. earth).....	1.12	0.53	0.18	0.27	0.05	N	0.21	0.21	N	0.12
Social and related sciences.....	136.68	29.66	9.88	16.98	1.95	0.85	39.07	22.94	2.32	42.70
Economics.....	19.41	6.51	1.69	4.39	0.28	0.14	7.14	3.73	0.20	1.83
Political and related sciences.....	14.29	2.85	1.05	1.48	0.22	0.10	6.53	3.04	0.16	1.71
Psychology.....	71.02	11.91	3.81	6.70	0.95	0.46	11.83	9.90	1.17	36.22
Sociology and anthropology.....	19.79	5.43	2.21	2.88	0.24	0.09	8.49	3.91	0.36	1.61
Other social sciences.....	12.17	2.96	1.13	1.52	0.26	0.06	5.07	2.36	0.43	1.34

See explanatory information and SOURCE(S) at end of table.

Table C-19. Number of employed doctoral scientists and engineers, by field of doctorate and primary work activity: 1993

Field of doctorate	Total	Research & development					Non-research & development			
		Total	Basic research	Applied research	Development	Design 1/	Teaching	Management, sales, and administration	Computer applications	Prof. services/ other
Thousands										
Engineering.....	75.12	37.08	3.70	19.09	8.74	5.55	12.15	15.63	6.10	4.16
Aerospace/aeronautical.....	3.05	1.29	0.09	0.84	0.27	0.09	0.60	0.65	0.34	0.17
Chemical.....	11.14	6.35	0.46	3.11	1.83	0.95	0.93	2.66	0.68	0.51
Civil.....	7.06	3.08	0.21	1.66	0.30	0.91	1.59	1.33	0.47	0.59
Electrical/computer.....	19.41	9.07	0.90	4.15	2.51	1.50	3.19	4.11	2.26	0.78
Industrial.....	1.90	0.44	N	0.30	N	0.06	0.77	0.35	0.23	0.11
Mechanical.....	9.47	4.52	0.58	2.07	1.29	0.58	1.72	2.10	0.72	0.40
Other engineering.....	23.10	12.33	1.43	6.96	2.50	1.44	3.34	4.42	1.41	1.60

1/ This category of R&D refers to "design" in the context of engineering, e.g., the design of equipment, processes, structures, and prototype models, as opposed to "design" in other contexts, e.g., the design of entire research programs, experiments, etc.

NOTE: All numbers in the table are approximations derived from a sample.

KEY: N = No cases reported (see NOTE).

SOURCE: National Science Foundation/SRS, 1993 Survey of Doctorate Recipients

Table C-20. Scientists and engineers engaged in R&D, and per 10,000 labor force population, by country: 1981-93

Year	Number of scientists and engineers engaged in R&D							Scientists and engineers engaged in R&D						
	United States	Japan	Germany	France	United Kingdom	Italy	Canada	United States	Japan	Germany	France	United Kingdom	Italy	Canada
	Thousands							per 10,000 labor force						
1981.....	683.3	311.0	124.7	85.5	127.0	52.1	40.5	61.9	54.5	44.0	36.3	47.5	22.9	33.8
1982.....	711.9	321.0	NA	90.1	128.0	56.7	44.1	63.6	55.6	NA	37.9	48.0	24.9	36.8
1983.....	751.7	347.4	130.8	92.7	127.0	63.0	45.6	66.4	59.0	45.7	39.1	47.7	27.3	37.4
1984.....	797.8	357.4	NA	98.2	129.0	62.0	48.7	69.2	60.3	NA	41.1	47.3	26.6	39.3
1985.....	801.9	380.8	143.6	10.2	131.0	63.8	52.5	68.4	63.9	49.7	42.8	47.3	27.1	41.7
1986.....	NA	393.0	NA	10.5	134.0	67.8	56.0	NA	65.3	NA	43.7	48.2	28.4	43.7
1987.....	877.8	415.6	165.6	10.9	134.0	70.6	58.3	72.2	68.3	56.4	45.4	47.9	29.4	44.6
1988.....	NA	434.6	NA	11.5	137.0	74.8	60.6	NA	70.5	NA	47.6	48.5	30.9	45.4
1989.....	924.2	457.5	176.4	12.0	133.0	76.1	62.0	73.6	73.0	59.2	49.6	46.8	31.4	45.6
1990.....	NA	477.9	NA	12.4	133.0	77.9	63.9	NA	74.9	NA	49.9	46.7	31.8	46.4
1991.....	960.4	491.1	240.8	13.0	131.0	75.2	65.2	75.7	75.5	61.5	51.8	46.3	30.6	47.1
1992.....	NA	511.4	234.3	14.2	134.0	74.4	NA	NA	77.7	60.2	56.4	47.6	30.2	NA
1993.....	962.7	526.5	229.8	14.6	140.0	74.4	NA	74.3	79.6	59.4	57.9	49.7	32.7	NA

KEY: NA = not available

NOTES: Table includes scientists and engineers (S&Es) engaged in R&D on a full-time equivalent (FTE) basis with the following exceptions: Japanese data include persons primarily employed in R&D in the natural sciences and engineering; and the U.S. data are a mix of S&Es engaged in R&D on an FTE basis and counts of S&Es whose primary work activity is R&D. The United Kingdom data exclude the private nonprofit sector (about 2-5 percent of total). As a result of ongoing improvements in methodology and measurement, there are major breaks in the continuity of the time series: for France (between 1980-81), the United Kingdom (between 1984-85), and the United States (between 1984-85).

SOURCES: National Science Foundation/SRS, Organisation for Economic Co-operation and Development

Table C-21. International total R&D expenditures and R&D as a percentage of GDP: 1981-95

Year	Total R&D Expenditures (Billions of constant 1987 dollars) 1/							R&D expenditures as a percentage of GDP						
	United States	Japan	Germany 2/	France	United Kingdom	Italy	Canada	United States	Japan	Germany 2/	France	United Kingdom	Italy	Canada
1981.....	91.41	28.74	20.29	14.09	14.68	5.83	4.38	2.37	2.13	2.43	1.97	2.37	0.87	1.23
1982.....	95.54	30.87	20.78	15.06	NA	6.03	4.74	2.54	2.22	2.52	2.06	NA	0.90	1.38
1983.....	102.29	33.48	21.18	15.51	14.41	6.42	4.80	2.62	2.35	2.52	2.11	2.19	0.95	1.35
1984.....	111.20	35.95	21.59	16.36	NA	6.96	5.21	2.68	2.43	2.51	2.21	NA	1.01	1.39
1985.....	120.60	40.01	23.74	17.00	15.59	7.95	5.64	2.82	2.58	2.72	2.25	2.27	1.13	1.44
1986.....	123.32	40.62	24.42	17.21	18.10	8.21	5.94	2.80	2.56	2.73	2.23	2.29	1.13	1.47
1987.....	125.38	43.42	26.02	17.90	16.76	8.88	5.98	2.76	2.63	2.88	2.27	2.22	1.19	1.42
1988.....	127.83	46.87	26.85	18.68	17.27	9.45	6.07	2.71	2.67	2.86	2.28	2.18	1.22	1.38
1989.....	129.89	51.28	27.90	19.81	17.63	9.92	6.17	2.68	2.80	2.87	2.33	2.20	1.24	1.37
1990.....	134.00	55.49	28.24	20.99	18.00	10.56	6.55	2.73	2.89	2.76	2.41	2.23	1.30	1.46
1991.....	136.30	57.12	30.17	21.21	16.48	10.92	6.65	2.79	2.86	2.61	2.41	2.16	1.32	1.51
1992.....	136.20	57.69	30.96	22.13	17.60	11.30	6.90	2.73	2.81	2.48	2.42	2.18	1.31	1.55
1993.....	133.78	55.96	29.58	21.41	17.50	10.30	7.21	2.60	2.73	2.43	2.45	2.20	1.26	1.59
1994.....	133.48	55.35	29.70	21.00	17.83	10.06	7.45	2.49	2.69	2.33	2.38	2.19	1.19	1.57
1995 (prelim.).....	139.40	NA	28.33	NA	NA	9.67	7.39	2.52	NA	2.27	NA	NA	1.13	1.53

1/ Conversions of foreign currencies to U.S. dollars are calculated with OECD purchasing power parity exchange rates.

2/ Germany's data for 1981-90 are for West Germany.

KEY: NA = not available

NOTES: Data are preliminary for 1995.
Constant 1987 dollars are based on U.S. Department of Commerce calendar year GDP implicit price deflators.

SOURCES: NSF, Division of Science Resources Studies; Organisation for Economic Co-operation and Development

Table C-22. International nondefense R&D expenditures and nondefense R&D as a percentage of GDP: 1981-95

Year	Total nondefense R&D Expenditures (Billions of constant 1987 dollars) 1/							Nondefense R&D expenditures as a percentage of GDP						
	United States	Japan	Germany 2/	France	United Kingdom	Italy	Canada	United States	Japan	Germany 2/	France	United Kingdom	Italy	Canada
1981.....	68.0	28.7	19.6	11.2	11.4	5.7	4.3	1.77	2.12	2.34	1.57	1.84	0.85	1.20
1982.....	68.8	30.6	20.1	12.1	NA	5.9	4.6	1.83	2.21	2.44	1.66	NA	0.88	1.34
1983.....	72.1	33.3	20.4	12.8	11.1	6.2	4.7	1.85	2.34	2.43	1.74	1.69	0.92	1.31
1984.....	78.0	35.7	20.8	13.5	NA	6.7	5.0	1.88	2.41	2.42	1.82	NA	0.96	1.34
1985.....	83.3	39.7	22.7	14.1	12.4	7.5	5.5	1.95	2.56	2.60	1.87	1.80	1.07	1.39
1986.....	84.6	40.3	23.4	14.1	14.7	7.8	5.8	1.92	2.54	2.61	1.84	1.85	1.08	1.42
1987.....	85.6	43.0	24.9	14.6	13.8	8.5	5.8	1.89	2.61	2.75	1.85	1.83	1.14	1.37
1988.....	89.0	46.5	25.7	15.2	14.6	8.9	5.9	1.89	2.65	2.74	1.85	1.84	1.15	1.33
1989.....	93.7	50.8	26.7	16.3	14.9	9.4	6.0	1.94	2.77	2.75	1.92	1.85	1.18	1.32
1990.....	99.7	55.0	26.9	16.9	15.3	10.2	6.3	2.04	2.87	2.63	1.95	1.89	1.26	1.41
1991.....	105.5	56.6	29.0	17.5	14.0	10.5	6.5	2.17	2.84	2.51	1.98	1.84	1.27	1.47
1992.....	106.8	57.1	29.8	18.6	15.2	10.9	6.7	2.14	2.78	2.39	2.03	1.88	1.27	1.51
1993.....	104.8	55.3	28.7	18.2	15.1	9.9	7.1	2.04	2.70	2.36	2.09	1.89	1.21	1.55
1994.....	106.9	54.7	28.8	NA	15.3	9.6	7.3	2.00	2.66	2.26	NA	1.88	1.14	1.53
1995 (prelim.).....	112.6	NA	NA	NA	NA	NA	7.3	2.04	NA	NA	NA	NA	NA	1.50

1/ Conversions of foreign currencies to U.S. dollars are calculated with OECD purchasing power parity exchange rates.

2/ Germany's data for 1981-90 are for West Germany.

KEY: NA = not available

NOTE: Data are preliminary for 1995.
Constant 1987 dollars are based on U.S. Department of Commerce calendar year GDP implicit price deflators.

SOURCES: NSF, Division of Science Resources Studies; Organisation for Economic Co-operation and Development

Table C-23. Federal R&D budget authority, by budget function: fiscal years 1980-96

Budget function	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996 1/
	Millions of current dollars																
	(prel.)																
Total.....	29,739	33,735	36,115	38,768	44,214	49,887	53,249	57,069	59,106	62,138	63,781	65,898	68,398	69,884	68,331	68,791	69,069
National defense.....	14,946	18,413	22,070	24,936	29,287	33,698	36,926	39,152	40,099	40,665	39,925	39,328	40,061	41,249	37,764	37,204	37,791
Health.....	3,694	3,871	3,869	4,298	4,779	5,418	5,565	6,556	7,076	7,773	8,308	9,226	10,055	10,280	10,993	11,407	11,902
Space research and technology.....	2,738	3,111	2,584	2,134	2,300	2,725	2,894	3,398	3,683	4,555	5,765	6,511	6,744	6,988	7,414	7,916	7,871
Energy.....	3,603	3,501	3,012	2,578	2,581	2,389	2,315	2,115	2,155	2,436	2,726	2,953	3,153	2,677	2,873	2,844	2,504
General science.....	1,233	1,340	1,359	1,502	1,676	1,862	1,873	2,042	2,160	2,373	2,410	2,635	2,659	2,691	2,712	2,794	2,862
Natural resources and environment.....	999	1,061	965	952	963	1,059	1,062	1,133	1,160	1,255	1,386	1,582	1,688	1,802	2,062	1,988	1,877
Transportation.....	887	869	791	876	1,040	1,030	917	908	896	1,064	1,045	1,231	1,523	1,703	1,888	1,833	1,752
Agriculture.....	585	659	693	745	762	836	815	822	882	907	950	1,052	1,155	1,152	1,193	1,194	1,178
Education, training, employment, and social services.....	468	298	228	189	200	220	248	267	285	347	374	433	365	348	373	369	316
International affairs.....	125	160	165	177	192	210	211	223	224	279	375	378	371	382	254	287	197
Veterans benefits and services.....	126	143	139	157	218	193	183	215	195	212	216	219	245	250	265	257	263
Commerce and housing credit.....	101	106	104	107	110	114	111	110	122	128	140	178	192	220	380	525	426
Community and regional development.....	119	104	63	44	46	50	59	37	79	57	67	88	95	57	68	70	52
Administration of justice.....	45	34	31	37	24	47	41	49	51	45	44	51	51	49	46	59	53
Income security.....	47	43	32	32	26	21	14	25	23	27	33	30	37	36	45	43	24
General government.....	22	22	10	6	8	17	14	17	17	15	17	4	4	0 2/	0 2/	1	3

1/ Fiscal year 1996 data reflect FY 1996 Omnibus appropriations (Public Law 104-134).

2/ Less than \$500,000

NOTES: Data for 1990-95 are actual budget authority. Data for 1996 are preliminary.

SOURCES: Agencies' submissions to Office of Management and Budget Circular No. A-11, Exhibit 44A, "Research and Development Activities"; agency budget justification documents; supplemental data obtained from the agencies' budget offices; and conference report for FY 1996 Omnibus appropriations (Public Law 104-134).

Table C-24. Federal outlays for R&D and other activities, by DOD and non-DOD sources: 1970-96

Year	Federal R&D outlays			All Federal outlays				Percent R&D/total outlays		
	Total	Dept. of Defense (DOD) R&D outlays	Federal non-DOD R&D outlays	Total on-budget outlays	DOD outlays	Interest on National debt	Non-DOD, non-interest outlays	DOD R&D /DOD total	Total Federal R&D / total outlays	Non-DOD R&D / non-DOD, non-interest outlays
	Millions of current dollars							Percent		
1970.....	15,156	7,447	7,709	168,042	80,123	15,948	71,971	9.29	9.02	10.71
1971.....	15,358	7,561	7,797	177,346	77,497	16,783	83,066	9.76	8.66	9.39
1972.....	16,163	8,139	8,024	193,824	77,645	17,584	98,595	10.48	8.34	8.14
1973.....	16,850	8,441	8,409	200,118	75,033	19,629	105,456	11.25	8.42	7.97
1974.....	17,593	8,815	8,778	217,270	77,864	23,969	115,437	11.32	8.10	7.60
1975.....	18,721	9,211	9,510	271,892	84,852	26,047	160,993	10.86	6.89	5.91
1976.....	20,220	9,301	10,919	302,183	87,917	29,539	184,727	10.58	6.69	5.91
1977.....	22,083	10,182	11,901	328,502	95,147	32,551	200,804	10.70	6.72	5.93
1978.....	24,020	10,623	13,397	369,089	102,259	37,861	228,969	10.39	6.51	5.85
1979.....	25,838	11,497	14,341	403,507	113,605	44,860	245,042	10.12	6.40	5.85
1980.....	29,154	13,501	15,653	476,618	130,912	54,877	290,829	10.31	6.12	5.38
1981.....	32,459	15,755	16,704	543,053	153,868	71,062	318,123	10.24	5.98	5.25
1982.....	34,391	18,251	16,140	594,351	180,714	87,114	326,523	10.10	5.79	4.94
1983.....	36,659	21,106	15,553	661,272	204,410	91,673	365,189	10.33	5.54	4.26
1984.....	39,691	22,619	17,072	686,032	220,928	114,432	350,672	10.24	5.79	4.87
1985.....	44,171	26,742	17,429	769,584	245,154	133,622	390,808	10.91	5.74	4.46
1986.....	50,609	32,211	18,398	806,838	265,480	140,377	400,981	12.13	6.27	4.59
1987.....	51,612	33,254	18,358	810,079	273,966	143,942	392,171	12.14	6.37	4.68
1988.....	54,739	34,157	20,582	861,449	281,935	159,253	420,261	12.12	6.35	4.90
1989.....	59,450	36,453	22,997	932,261	294,880	180,661	456,720	12.36	6.38	5.04
1990.....	62,135	36,703	25,432	1,027,450	289,755	200,212	537,483	12.67	6.05	4.73
1991.....	61,130	33,014	28,117	1,081,944	262,389	214,763	604,792	12.58	5.65	4.65
1992.....	62,934	34,221	28,714	1,128,518	286,892	223,059	618,567	11.93	5.58	4.64
1993.....	65,241	34,153	31,089	1,142,088	278,561	225,599	637,928	12.26	5.71	4.87
1994.....	66,159	34,918	31,241	1,181,469	268,622	232,160	680,687	13.00	5.60	4.59
1995 (prelim.).....	67,400	34,998	32,402	1,230,469	259,442	265,478	705,549	13.49	5.48	4.59
1996 (prelim.).....	67,653	33,866	33,787	1,270,292	254,258	277,499	738,535	13.32	5.33	4.57

NOTES: DOD R&D outlays are not strictly comparable to "defense R&D" as they do not include Department of Energy defense-related activities. Data are preliminary for 1995 and 1996.

SOURCES: National Science Foundation/SRS, U.S. Department of Commerce, and Office of Management and Budget, *Historical Tables: Budget of the United States Government, Fiscal Year 1997*.

Table C-25. Federal obligations for research and development, by agency: fiscal years 1985-96

Agency and subdivision	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	preliminary	
											1995	1996
Millions of current collars												
Total, all agencies.....	48,359.6	51,412.4	55,253.7	56,769.4	61,406.5	63,559.5	61,295.2	65,592.6	67,314.0	67,255.8	70,093.9	68,842.4
Department of Agriculture, total.....	943.0	928.5	947.9	1,016.6	1,038.3	1,108.4	1,236.6	1,327.1	1,327.8	1,399.6	1,390.3	1,393.1
Agricultural Research Service.....	469.7	463.4	478.6	505.7	523.5	545.5	591.0	627.1	627.2	678.7	683.9	681.6
Cooperative State Research Service.....	284.3	269.0	270.7	298.4	307.3	324.2	376.8	418.2	418.6	429.0	419.0	419.4
Forest Service.....	113.1	113.3	126.7	135.5	131.4	158.6	174.7	180.7	182.7	193.1	199.7	203.8
Other.....	75.9	82.8	71.9	77.0	76.1	80.1	94.1	101.1	99.3	98.8	87.7	88.3
Department of Commerce, total.....	398.8	399.2	402.2	388.9	397.9	438.2	489.6	651.2	656.3	826.1	1,352.2	1,325.8
National Institute of Standards & Technology.....	100.5	100.8	98.6	107.9	115.5	122.3	140.0	179.0	207.2	253.2	796.0	718.0
National Oceanic & Atmospheric Administration.....	269.8	274.7	286.1	263.0	268.6	300.1	338.0	462.4	439.5	562.6	544.3	594.1
Other.....	28.5	23.7	17.5	18.0	13.8	15.8	11.6	9.8	9.6	10.3	11.9	13.7
Department of Defense, total.....	29,791.5	32,937.9	35,231.5	35,248.9	37,576.9	37,268.1	32,134.8	36,129.5	35,849.1	34,566.1	35,423.5	33,706.0
Department of the Army.....	4,570.8	4,809.4	5,019.5	4,806.0	5,659.3	5,684.1	6,081.5	6,854.2	6,209.1	5,574.1	5,587.2	4,547.4
Department of the Navy.....	9,127.4	9,650.3	9,507.8	9,514.1	9,666.1	9,586.2	7,806.0	8,030.8	9,102.9	8,929.0	9,240.2	8,421.9
Department of the Air Force.....	13,260.9	13,593.8	15,347.7	14,867.3	15,237.4	14,831.4	10,937.5	13,427.1	12,635.3	12,527.4	12,782.3	13,282.5
Defense Agencies.....	2,781.7	4,767.4	5,219.7	5,832.9	6,858.9	6,945.2	7,072.5	7,571.7	7,647.0	7,292.5	7,567.6	7,178.4
Operational Test and Evaluation, Director.....	NA	0.0	8.4	68.2	14.4	32.6	13.6	12.4	12.3	11.2	19.1	22.7
Test & Evaluation, Deputy Under Secretary Defense.....	50.6	117.1	128.5	160.3	140.7	188.7	223.7	233.2	242.5	231.8	227.0	253.0
Department of Education, total.....	124.9	121.3	132.5	140.7	159.1	169.9	171.0	168.5	177.7	176.6	200.7	188.3
Department of Energy, total.....	4,966.0	4,688.3	4,757.2	5,036.4	5,192.6	5,630.6	5,983.1	6,172.2	6,262.1	6,048.0	6,418.6	6,842.3
Department of Health & Human Services, total.....	5,451.0	5,657.6	6,606.3	7,158.0	7,902.8	8,405.6	9,756.0	8,987.8	10,349.2	11,021.5	11,451.3	11,828.2
Centers for Disease Control.....	47.6	52.2	66.2	88.7	117.8	95.6	113.4	146.9	162.5	206.8	216.9	217.1
Food and Drug Administration.....	82.1	79.4	85.0	91.0	99.0	99.0	125.0	135.7	154.5	169.4	170.4	171.8
National Institutes of Health 1/.....	5,205.3	5,401.2	6,326.4	6,845.7	7,474.0	7,979.2	9,156.1	8,409.2	9,765.1	10,329.4	10,694.4	11,121.1
Other.....	116.0	124.8	128.7	132.6	212.0	231.8	361.5	296.0	267.1	315.9	369.6	318.2

See explanatory information and SOURCE at end of table.

Table C-25. Federal obligations for research and development, by agency: fiscal years 1985-96

Page 2 of 3

Agency and subdivision	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	preliminary	
											1995	1996
Millions of current dollars												
Department of Housing and Urban Development, total.....	18.5	15.3	16.3	18.4	18.0	19.3	27.8	25.1	23.6	39.6	42.5	42.5
Department of Interior, total.....	391.7	385.2	403.8	416.8	469.0	508.5	592.9	609.2	619.1	694.1	687.1	683.2
Bureau of Mines.....	89.9	84.4	88.8	91.3	98.7	99.3	106.1	107.1	111.9	107.9	105.2	86.8
Geological Survey.....	214.9	218.6	226.8	236.1	279.9	308.4	356.6	361.4	356.7	371.1	362.7	371.8
US Fish & Wildlife Service 2/.....	49.0	47.0	53.3	59.2	60.6	69.4	81.0	85.1	86.5	NA	NA	NA
Other.....	37.9	35.2	34.9	30.2	29.8	31.4	49.2	55.6	64.0	215.1	219.2	224.6
Department of Justice, total.....	36.0	36.5	42.4	43.1	38.2	40.5	48.9	48.0	48.9	45.0	50.9	53.5
Department of Labor, total.....	13.3	10.4	21.6	35.6	35.4	73.0	44.0	51.7	55.0	59.7	67.0	67.2
Department of State, total.....	1.5	1.5	3.0	4.2	4.7	4.7	5.9	5.6	5.3	8.2	6.4	5.4
Department of Transportation, total.....	428.9	385.5	325.0	304.6	303.3	366.6	379.9	445.0	545.3	620.7	771.3	710.1
Federal Aviation Administration.....	286.3	260.6	167.3	160.5	146.8	216.1	220.1	236.2	248.9	285.6	295.5	287.9
Federal Highway Administration.....	49.0	45.5	76.7	74.1	91.0	91.5	86.9	130.2	174.9	235.7	356.5	0.0
Federal Railroad Administration.....	15.0	15.4	11.2	10.0	9.0	10.2	15.9	22.7	25.2	19.5	33.6	40.0
National Highway Traffic Safety Administration.....	28.1	22.4	27.9	28.3	29.7	16.9	21.4	25.8	31.6	25.3	25.9	20.2
Other 3/.....	50.5	41.6	41.9	31.7	26.8	31.9	35.6	30.1	64.7	54.6	59.8	362.0
Department of Treasury, total.....	24.3	24.0	26.9	26.1	25.6	25.6	30.8	24.6	16.6	19.0	51.6	52.8
Department of Veterans Affairs, total.....	226.6	186.2	209.5	215.3	234.7	237.7	216.6	223.9	236.2	248.0	260.4	258.0
Agency for International Development.....	220.4	251.2	217.5	204.4	279.1	334.6	377.7	365.9	382.2	254.3	288.3	222.0
Environmental Protection Agency.....	320.4	317.3	348.2	347.4	380.3	419.7	432.6	483.9	495.3	553.5	583.6	676.4
National Aeronautics and Space Administration.....	3,327.2	3,419.8	3,787.1	4,330.4	5,393.5	6,533.2	7,280.2	7,657.6	8,019.9	8,296.2	8,571.4	8,105.7

See explanatory information and SOURCE at end of table.

Table C-25. Federal obligations for research and development, by agency: fiscal years 1985-96

Agency and subdivision	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	preliminary	
											1995	1996
Millions of current dollars												
National Science Foundation.....	1,345.6	1,353.3	1,470.5	1,532.8	1,670.4	1,689.5	1,785.2	1,868.4	1,881.9	2,040.4	2,145.4	2,303.1
Nuclear Regulatory Commission.....	150.0	123.8	122.5	108.5	114.8	108.8	108.8	119.0	119.8	90.7	86.0	81.8
Smithsonian Institution.....	71.1	63.3	71.5	75.1	80.2	84.0	98.0	98.0	102.0	124.2	125.2	129.2
Tennessee Valley Authority.....	79.5	77.5	77.9	87.3	62.6	64.9	68.3	97.3	108.6	97.9	93.1	103.4
All other agencies 4/.....	29.4	28.8	32.4	29.9	29.1	28.1	26.5	33.1	32.1	26.4	27.1	64.4

1/ Includes research and development activities of the Alcohol, Drug Abuse, and Mental Health Administration, which existed as a separate agency prior to October 1992, before its functions became associated with NIH.

2/ As of Fiscal Year 1994, the National Biological Service performs all biological research activities formerly funded by the US Fish & Wildlife Service and the National Park Service.

3/ For Fiscal Year 1996, monies slated for "infrastructure investment" represent a proposed consolidation of several agencies with the Department of Transportation.

4/ As of March 31, 1995, the Social Security Administration became an independent agency, and no longer part of the Department of Health and Human Services. The Social Security Administration's preliminary R&D obligations for 1996 is \$37.2 million, explaining the rise in R&D obligations for "all other agencies" between 1995 and 1996.

KEY: NA = not applicable

NOTES: Because of rounding, detail may not add to totals.

SOURCE: National Science Foundation/SRS, Survey of Federal Funds for Research and Development: Fiscal Years 1994, 1995, and 1996.

Table C-26. Federal obligations for basic research, by agency: fiscal years 1985-96

Agency and subdivision	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	preliminary	
											1995	1996
Millions of current dollars												
Total, all agencies.....	7,818.7	8,153.1	8,942.4	9,473.6	10,602.0	11,285.6	12,170.8	12,489.9	13,399.1	13,552.9	13,569.1	14,037.4
Department of Agriculture, total.....	445.4	432.9	445.5	480.6	484.9	519.2	557.6	595.2	615.9	606.3	603.1	615.3
Agricultural Research Service.....	250.2	247.7	253.4	271.1	282.7	294.0	309.7	326.1	341.0	366.5	369.3	368.1
Cooperative State Research Service.....	141.5	131.7	132.8	145.8	142.6	153.7	170.4	189.6	192.5	194.7	191.9	204.3
Forest Service.....	44.1	42.2	49.4	51.6	50.0	60.3	66.6	68.9	69.4	33.3	34.3	35.2
Other.....	9.6	11.3	9.9	12.1	9.6	11.2	10.9	10.6	13.0	11.8	7.6	7.7
Department of Commerce, total.....	23.2	26.5	25.8	30.9	29.1	31.4	34.3	34.5	37.2	40.1	45.4	48.6
National Institute of Standards & Technology.....	22.1	25.7	25.1	26.3	27.9	28.6	31.9	33.6	36.5	39.8	45.1	48.3
National Oceanic & Atmospheric Administration.....	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Other.....	1.1	0.8	0.7	1.4	1.2	2.8	2.4	0.9	0.4	0.3	0.3	0.3
Department of Defense, total.....	861.4	923.9	907.6	876.9	947.9	947.6	994.2	1,098.9	1,268.2	1,222.3	1,282.0	1,196.1
Department of the Army.....	240.8	248.5	217.0	165.7	187.2	185.1	188.6	204.9	215.7	213.3	230.0	211.3
Department of the Navy.....	343.1	337.3	354.3	341.8	354.0	365.0	388.0	393.8	422.0	400.1	415.1	402.6
Department of the Air Force.....	198.3	216.5	221.6	196.4	202.8	197.0	209.2	205.8	218.7	242.4	228.1	239.9
Defense Agencies.....	79.2	121.7	114.8	173.0	203.9	200.5	208.3	294.4	411.8	366.5	408.8	342.3
Operational Test and Evaluation, Director.....	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Test & Evaluation, Deputy Under Secretary Defense.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Department of Education, total.....	14.6	4.5	3.1	4.4	4.4	4.9	8.6	7.5	5.3	5.5	5.8	5.4
Department of Energy, total.....	942.6	959.7	1,068.5	1,184.8	1,410.9	1,504.8	1,686.5	1,736.4	1,754.8	1,603.2	1,693.8	1,785.9
Department of Health & Human Services, total.....	3,232.5	3,338.8	3,827.9	4,081.4	4,388.0	4,649.0	5,050.1	5,058.7	5,696.7	5,884.0	6,085.2	6,309.3
Centers for Disease Control.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Food and Drug Administration.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
National Institutes of Health 1/.....	3,214.8	3,322.0	3,807.7	4,060.9	4,361.3	4,647.9	5,048.6	5,057.4	5,695.6	5,882.4	6,083.7	6,308.0
Other.....	17.7	16.8	20.2	20.5	26.7	1.1	1.5	1.3	1.1	1.6	1.5	1.3

See explanatory information, if any, and SOURCE at end of table.

Table C-26. Federal obligations for basic research, by agency: fiscal years 1985-96

Agency and subdivision	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	preliminary	
											1995	1996
Millions of current dollars												
Department of Housing and Urban Development, total.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Department of Interior, total.....	138.3	133.0	134.9	126.5	188.9	205.4	229.3	230.9	230.3	83.2	79.2	76.0
Bureau of Mines.....	49.9	44.9	45.6	32.1	43.9	40.6	42.8	43.7	44.6	25.4	23.3	18.8
Geological Survey.....	80.5	83.4	84.9	89.5	140.2	159.1	179.1	180.1	178.0	43.5	41.6	42.8
US Fish & Wildlife Service 2/.....	5.7	3.6	4.3	4.8	4.8	5.6	6.2	6.4	6.4	NA	NA	NA
Other.....	2.2	1.1	0.1	0.1	0.0	0.1	1.2	0.7	1.3	14.3	14.3	14.4
Department of Justice, total.....	4.2	5.3	8.1	7.6	6.8	8.8	6.4	5.3	5.0	5.9	5.7	6.0
Department of Labor, total.....	3.3	0.9	1.4	0.4	0.3	0.3	0.3	0.2	5.6	5.8	11.8	11.7
Department of State, total.....	0.0	0.0	2.6	3.1	3.4	3.5	4.6	4.9	4.8	7.8	6.0	5.0
Department of Transportation, total.....	1.1	0.6	0.2	0.0	0.0	0.0	0.0	1.2	1.7	3.0	3.5	1.9
Federal Aviation Administration.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Federal Highway Administration.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.7	3.0	3.5	0.0
Federal Railroad Administration.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
National Highway Traffic Safety Administration.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other 3/.....	1.1	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
Department of Treasury, total.....	4.8	5.1	4.7	4.8	3.4	3.4	3.6	3.6	6.5	0.0	0.0	0.0
Department of Veterans Affairs, total.....	15.4	14.8	17.2	17.3	16.6	16.2	16.1	15.7	13.3	14.4	13.5	13.0
Agency for International Development.....	1.7	4.3	2.8	3.0	3.1	5.0	5.7	5.8	8.4	1.8	0.7	1.3
Environmental Protection Agency.....	38.6	38.5	31.1	27.2	50.7	73.6	91.2	110.4	89.1	101.4	102.2	119.7
National Aeronautics and Space Administration.....	750.9	916.7	1,013.7	1,112.7	1,417.4	1,636.9	1,705.6	1,738.2	1,800.1	1,963.9	1,536.1	1,593.0

See explanatory information, if any, and SOURCE at end of table.

Table C-26. Federal obligations for basic research, by agency: fiscal years 1985-96

Agency and subdivision	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	preliminary	
											1995	1996
Millions of current dollars												
National Science Foundation.....	1,261.8	1,275.2	1,371.2	1,433.2	1,562.6	1,586.3	1,676.2	1,741.5	1,743.8	1,870.7	1,960.4	2,107.6
Nuclear Regulatory Commission.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Smithsonian Institution.....	71.1	63.3	71.5	75.1	80.2	84.0	98.0	98.0	102.0	124.2	125.2	129.2
Tennessee Valley Authority.....	5.5	7.3	3.9	3.2	2.9	4.7	1.9	2.1	9.9	8.9	9.0	11.8
All other agencies.....	2.3	1.8	0.7	0.5	0.5	0.6	0.6	0.9	0.5	0.5	0.5	0.6

1/ Includes research and development activities of the Alcohol, Drug Abuse, and Mental Health Administration, which existed as a separate agency prior to October 1992, before its functions became associated with NIH.

2/ As of fiscal year 1994, the National Biological Service performs all biological research activities formerly funded by the US Fish & Wildlife Service and the National Park Service.

3/ For fiscal year 1996, monies slated for "infrastructure investment" represent a proposed consolidation of several agencies with the Department of Transportation.

KEY: NA = not applicable

NOTE: Because of rounding, detail may not add to totals.

SOURCE: National Science Foundation/SRS, Survey of Federal Funds for Research and Development: Fiscal Years 1994, 1995, and 1996

Table C-27. Federal obligations for applied research, by agency: fiscal years 1985-96

Agency and subdivision	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	preliminary	
											1995	1996
											Millions of current dollars	
Total, all agencies.....	8,314.7	8,349.1	8,998.1	9,176.5	10,163.5	10,336.8	11,797.6	12,000.7	13,491.4	13,887.5	14,234.8	14,233.5
Department of Agriculture, total.....	465.6	463.5	473.4	504.6	517.3	542.1	617.9	665.8	635.8	715.9	708.0	698.8
Agricultural Research Service.....	191.8	188.3	201.1	208.2	209.4	218.2	241.1	257.1	233.3	257.9	259.9	259.0
Cooperative State Research Service.....	142.8	137.4	138.0	152.6	164.7	170.5	206.4	228.6	226.2	234.3	227.1	215.1
Forest Service.....	65.7	67.5	73.5	79.9	77.5	93.5	103.6	106.9	107.8	156.5	160.6	163.7
Other.....	65.3	70.3	60.8	63.9	65.7	59.9	66.8	73.2	68.5	67.2	60.4	61.0
Department of Commerce, total.....	301.0	312.9	312.8	311.5	321.9	345.6	415.4	561.4	544.9	678.2	948.3	968.4
National Institute of Standards & Technology.....	64.5	63.5	64.3	72.6	77.6	83.2	92.5	115.8	136.4	167.5	441.6	410.9
National Oceanic & Atmospheric Administration.....	224.4	237.5	234.4	225.0	234.6	252.4	315.6	438.7	401.4	502.7	497.3	546.4
Other.....	12.1	11.9	14.1	13.9	9.7	10.0	7.3	6.9	7.1	8.0	9.4	11.1
Department of Defense, total.....	2,306.9	2,303.3	2,440.0	2,362.2	2,708.2	2,581.6	2,723.8	2,974.5	3,515.2	3,040.0	3,169.0	2,948.9
Department of the Army.....	582.6	578.8	692.9	588.0	636.3	595.2	671.9	727.8	802.8	639.3	664.2	472.5
Department of the Navy.....	448.2	447.1	432.5	406.0	429.2	442.6	486.0	499.0	574.1	447.0	501.9	480.3
Department of the Air Force.....	538.4	542.5	563.2	576.7	604.6	579.3	621.2	584.7	669.1	571.9	682.8	673.7
Defense Agencies.....	737.7	735.0	751.3	791.5	1,038.1	964.6	944.7	1,162.9	1,469.2	1,381.7	1,320.1	1,322.4
Operational Test and Evaluation, Director.....	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Test & Evaluation, Deputy Under Secretary Defense.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Department of Education, total.....	77.3	91.3	103.8	106.6	117.5	125.3	123.1	119.5	128.3	131.2	143.4	142.6
Department of Energy, total.....	1,198.4	1,080.7	1,029.4	1,050.6	1,020.8	1,065.7	1,587.2	1,676.1	1,685.4	1,679.2	1,817.6	1,771.9
Department of Health & Human Services, total.....	1,795.8	1,850.8	2,194.0	2,415.6	2,700.4	2,818.1	3,112.4	2,886.8	3,495.9	3,852.5	4,029.2	4,110.3
Centers for Disease Control.....	47.6	52.2	66.2	88.7	117.8	95.6	113.4	146.9	162.5	206.8	216.9	217.1
Food and Drug Administration.....	82.1	79.4	85.0	91.0	99.0	99.0	125.0	135.7	154.5	169.4	170.4	171.8
National Institutes of Health 1/.....	1,589.8	1,660.5	1,980.2	2,172.2	2,393.2	2,489.1	2,657.4	2,341.3	2,942.9	3,197.4	3,311.9	3,443.8
Other.....	76.3	58.7	62.6	63.7	90.4	134.4	216.6	262.9	236.0	278.9	330.0	277.6

See explanatory information and SOURCE at end of table.

Table C-27. Federal obligations for applied research, by agency: fiscal years 1985-96

Agency and subdivision	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	preliminary	
											1995	1996
Millions of current dollars												
Department of Housing and Urban Development, total.....	6.5	5.3	5.5	6.3	6.1	6.6	9.4	8.8	8.1	13.7	15.2	15.3
Department of Interior, total.....	231.0	234.9	247.3	266.0	253.0	269.8	324.1	339.7	349.8	566.9	562.6	563.8
Bureau of Mines.....	36.7	36.6	39.6	54.1	49.3	49.3	56.2	59.2	60.4	70.0	66.9	55.2
Geological Survey.....	130.0	127.8	131.7	135.8	126.8	134.2	159.3	164.3	165.9	311.9	307.2	315.0
US Fish & Wildlife Service 2/.....	32.2	38.1	43.3	48.7	49.1	56.4	64.8	64.8	64.8	NA	NA	NA
Other.....	32.1	32.4	32.7	27.4	27.8	29.9	43.8	51.4	58.7	185.0	188.5	193.6
Department of Justice, total.....	15.1	17.0	11.8	9.8	10.7	11.1	14.7	15.0	20.5	20.0	21.8	23.4
Department of Labor, total.....	9.1	8.7	19.0	26.4	21.8	21.3	24.0	23.6	13.4	13.7	18.7	23.6
Department of State, total.....	1.5	1.5	0.3	1.0	1.3	1.2	1.3	0.7	0.5	0.4	0.4	0.4
Department of Transportation, total.....	70.2	67.6	68.6	91.2	120.5	119.2	114.6	155.7	224.4	270.4	363.7	311.3
Federal Aviation Administration.....	17.3	14.0	11.1	13.3	23.6	26.1	24.0	30.1	59.8	79.5	87.0	78.0
Federal Highway Administration.....	6.3	14.7	20.7	43.7	56.6	57.6	46.1	72.0	90.1	131.2	204.4	0.0
Federal Railroad Administration.....	11.4	12.5	10.4	8.2	7.5	8.5	13.2	18.9	20.9	16.1	21.3	16.2
National Highway Traffic Safety Administration.....	20.9	16.1	18.9	19.1	26.2	16.9	21.4	25.8	31.6	25.3	25.9	20.2
Other 3/.....	14.3	10.3	7.5	6.9	6.6	10.1	9.9	8.9	22.0	18.3	25.1	196.9
Department of Treasury, total.....	13.6	12.7	12.7	11.1	13.0	15.3	20.6	17.2	4.6	9.2	36.7	37.8
Department of Veterans Affairs, total.....	193.7	155.1	173.1	178.8	197.1	199.4	177.7	185.2	194.1	209.1	220.4	218.5
Agency for International Development.....	158.1	180.7	151.2	132.1	216.0	300.2	351.7	294.2	350.8	214.4	230.8	190.7
Environmental Protection Agency.....	176.0	179.3	246.1	240.7	222.6	241.6	261.9	293.9	272.4	301.0	310.8	371.6
National Aeronautics and Space Administration.....	1,032.7	1,152.3	1,255.5	1,218.9	1,461.4	1,423.8	1,665.6	1,491.1	1,748.6	1,876.7	1,331.5	1,483.5

See explanatory information and SOURCE at end of table.

Table C-27. Federal obligations for applied research, by agency: fiscal years 1985-96

Agency and subdivision	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	preliminary	
											1995	1996
Millions of current dollars												
National Science Foundation.....	83.8	78.1	99.3	99.6	107.8	103.3	109.0	126.9	138.1	169.7	185.0	195.4
Nuclear Regulatory Commission.....	150.0	123.8	122.5	108.5	114.8	108.8	108.8	119.0	119.8	90.7	86.0	81.8
Smithsonian Institution.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tennessee Valley Authority.....	8.9	10.5	13.8	15.3	11.7	17.0	16.9	22.2	18.1	17.0	17.4	19.3
All other agencies 4/.....	19.5	19.1	18.0	19.7	19.6	19.8	17.5	23.4	22.7	17.6	18.3	56.2

1/ Includes research and development activities of the Alcohol, Drug Abuse, and Mental Health Administration, which existed as a separate agency prior to October 1992, before its functions became associated with NIH.

2/ As of fiscal year 1994, the National Biological Service performs all biological research activities formerly funded by the US Fish & Wildlife Service and the National Park Service.

3/ For fiscal year 1996, monies slated for "infrastructure investment" represent a proposed consolidation of several agencies with the Department of Transportation.

4/ As of March 31, 1995, the Social Security Administration became an independent agency, and no longer part of the Department of Health and Human Services. The Social Security Administration's preliminary R&D obligations for 1996 is \$37.2 million, explaining the rise in R&D obligations for "all other agencies" between 1995 and 1996.

KEY: NA = not applicable

NOTES: Because of rounding, detail may not add to totals.

SOURCE: National Science Foundation/SRS, Survey of Federal Funds for Research and Development: Fiscal Years 1994, 1995, and 1996

Table C-28. Federal obligations for development, by agency: fiscal years 1985-96

Agency and subdivision	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	preliminary	
											1995	1996
											Millions of current dollars	
Total, all agencies.....	32,226.1	34,910.2	37,313.2	38,119.3	40,641.0	41,937.1	37,326.8	41,102.0	40,423.5	39,815.4	42,290.0	40,571.5
Department of Agriculture, total.....	32.0	32.1	29.0	31.4	36.1	47.1	61.2	66.1	76.1	77.4	79.2	79.0
Agricultural Research Service.....	27.7	27.4	24.0	26.3	31.4	33.3	40.2	43.9	52.8	54.3	54.7	54.5
Cooperative State Research Service.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forest Service.....	3.3	3.6	3.8	4.0	3.9	4.8	4.5	4.9	5.5	3.3	4.8	4.9
Other.....	1.0	1.1	1.2	1.1	0.8	9.0	16.5	17.3	17.8	19.8	19.7	19.6
Department of Commerce, total.....	74.6	59.7	63.7	46.6	46.9	61.2	39.9	55.3	74.2	107.8	358.5	308.8
National Institute of Standards & Technology.....	14.0	11.6	9.3	9.1	10.0	10.5	15.6	29.6	34.3	45.9	309.4	258.8
National Oceanic & Atmospheric Administration.....	45.4	37.2	51.7	34.8	34.1	47.7	22.4	23.7	37.8	59.9	47.0	47.7
Other.....	15.2	10.9	2.7	2.7	2.8	3.0	1.9	2.0	2.1	2.0	2.1	2.3
Department of Defense, total.....	26,623.2	29,710.7	31,884.0	32,009.7	33,920.8	33,738.9	28,416.9	32,056.1	31,065.7	30,303.8	30,972.5	29,561.0
Department of the Army.....	3,747.4	3,982.1	4,109.6	4,052.3	4,835.9	4,903.8	5,221.0	5,921.5	5,190.5	4,721.5	4,693.0	3,863.6
Department of the Navy.....	8,336.1	8,865.9	8,721.1	8,766.2	8,882.9	8,778.6	6,932.0	7,138.0	8,106.8	8,081.9	8,323.2	7,539.1
Department of the Air Force.....	12,524.3	12,834.8	14,562.9	14,094.2	14,430.0	14,055.1	10,107.1	12,636.6	11,747.5	11,713.1	11,871.4	12,369.0
Defense Agencies.....	1,964.8	3,910.7	4,353.5	4,868.4	5,616.8	5,780.2	5,919.4	6,114.4	5,766.0	5,544.3	5,838.7	5,513.7
Operational Test and Evaluation, Director.....	NA	0.0	8.4	68.2	14.4	32.6	13.6	12.4	12.3	11.2	19.1	22.7
Test & Evaluation, Deputy Under Secretary Defense.....	50.6	117.1	128.5	160.3	140.7	188.7	223.7	233.2	242.5	231.8	227.0	253.0
Department of Education, total.....	33.0	25.5	25.6	29.7	37.2	39.7	39.4	41.5	44.1	39.9	51.5	40.3
Department of Energy, total.....	2,825.0	2,648.0	2,659.4	2,801.0	2,760.9	3,060.1	2,709.5	2,759.7	2,821.9	2,765.5	2,907.1	3,284.5
Department of Health & Human Services, total.....	422.7	468.0	584.3	661.1	814.4	938.5	1,593.5	1,042.3	1,156.6	1,285.1	1,337.0	1,408.6
Centers for Disease Control.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Food and Drug Administration.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
National Institutes of Health 1/.....	400.7	418.7	538.4	612.6	719.5	842.2	1,450.1	1,010.5	1,126.6	1,249.6	1,298.7	1,369.4
Other.....	22.0	49.3	45.9	48.5	94.9	96.3	143.4	31.8	30.0	35.5	38.3	39.2

See explanatory information and SOURCE at end of table.

Table C-28. Federal obligations for development, by agency: fiscal years 1985-96

Agency and subdivision	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	preliminary	
											1995	1996
Millions of current dollars												
Department of Housing and Urban Development, total.....	12.0	10.1	10.8	12.1	11.9	12.7	18.4	16.3	15.5	25.9	27.3	27.2
Department of Interior, total.....	22.4	17.3	21.7	24.3	27.1	33.3	39.5	38.6	39.0	43.9	45.3	43.3
Bureau of Mines.....	3.3	2.8	3.6	5.2	5.4	9.4	7.1	4.2	6.9	12.5	15.0	12.8
Geological Survey.....	4.4	7.4	10.3	10.9	12.9	15.1	18.2	16.9	12.8	15.7	14.0	14.0
US Fish & Wildlife Service 2/.....	11.1	5.3	5.7	5.7	6.7	7.4	10.0	13.9	15.3	NA	NA	NA
Other.....	3.6	1.8	2.1	2.5	2.1	1.4	4.2	3.6	4.0	15.7	16.3	16.5
Department of Justice, total.....	16.7	14.1	22.5	25.7	20.6	20.6	27.8	27.7	23.3	19.2	23.5	24.1
Department of Labor, total.....	0.9	0.9	1.2	8.9	13.3	51.4	19.7	27.9	36.1	40.1	36.5	31.9
Department of State, total.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Department of Transportation, total.....	357.6	317.3	256.2	213.4	182.9	247.4	265.3	288.1	319.3	347.4	404.1	396.9
Federal Aviation Administration.....	269.0	246.6	156.2	147.3	123.2	189.9	196.2	206.1	189.1	206.1	208.5	209.8
Federal Highway Administration.....	42.6	30.8	56.0	30.4	34.4	33.8	40.8	57.0	83.1	101.5	148.5	0.0
Federal Railroad Administration.....	3.6	2.9	0.8	1.8	1.5	1.7	2.7	3.9	4.3	3.4	12.4	23.8
National Highway Traffic Safety Administration.....	7.2	6.3	9.0	9.2	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other 3/.....	35.2	30.7	34.2	24.7	20.3	22.0	25.6	21.1	42.8	36.4	34.7	163.3
Department of Treasury, total.....	6.0	6.3	9.5	10.2	9.3	6.9	6.7	3.8	5.5	9.8	14.9	14.9
Department of Veterans Affairs, total.....	17.5	16.3	19.2	19.2	21.0	22.1	22.8	23.0	28.7	24.5	26.5	26.5
Agency for International Development.....	60.5	66.2	63.5	69.3	60.0	29.3	20.4	65.9	23.0	38.1	56.9	30.0
Environmental Protection Agency.....	105.8	99.5	71.0	79.5	107.0	104.5	79.5	79.6	133.7	151.2	170.7	185.0
National Aeronautics and Space Administration.....	1,543.6	1,350.8	1,517.8	1,998.8	2,514.7	3,472.6	3,909.1	4,428.3	4,471.1	4,455.7	5,703.8	5,029.3

See explanatory information and SOURCE at end of table.

Table C-28. Federal obligations for development, by agency: fiscal years 1985-96

Agency and subdivision	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	preliminary	
											1995	1996
Millions of current dollars												
National Science Foundation.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nuclear Regulatory Commission.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Smithsonian Institution.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tennessee Valley Authority.....	65.1	59.8	60.2	68.8	48.0	43.2	49.5	72.9	80.6	71.9	66.7	72.2
All other agencies.....	7.5	7.6	13.6	9.6	8.9	7.6	7.7	8.9	9.1	8.2	8.0	8.0

1/ Includes research and development activities of the Alcohol, Drug Abuse, and Mental Health Administration, which existed as a separate agency prior to October 1992, before its functions became associated with NIH.

2/ As of fiscal year 1994, the National Biological Service performs all biological research activities formerly funded by the US Fish & Wildlife Service and the National Park Service.

3/ For fiscal year 1996, monies slated for "infrastructure investment" represent a proposed consolidation of several agencies with the Department of Transportation.

KEY: NA = not applicable

NOTES: Because of rounding, detail may not add to totals.

SOURCE: National Science Foundation/SRS, Survey of Federal Funds for Research and Development: Fiscal Years 1994, 1995, and 1996.

Table C-29. Total (company, Federal, and other) funds for industrial R&D performance, by industry and size of company: 1984-94

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Millions of current dollars												
Total.....		74,800	84,239	87,823	92,155	97,015	102,055	109,727	116,952	119,110	117,400	119,595
Food, kindred, and tobacco products	20,21	D	D	D	1,206	D	D	D	1,277	1,386	1,345	1,476
Textiles and apparel.....	22,23	D	D	D	D	D	D	D	D	D	D	D
Lumber, wood products, and furniture.....	24,25	143	147	144	137	D	192	216	D	D	D	D
Paper and allied products.....	26	D	D	D	D	D	879	1,059	D	D	D	D
Chemicals and allied products.....	28	7,927	8,540	8,843	9,635	11,067	12,069	13,291	14,648	15,381	D	D
Industrial chemicals.....	281-82,286	3,240	3,498	3,552	3,716	4,172	4,451	5,010	5,390	5,165	D	D
Drugs and medicines.....	283	D	D	3,658	D	4,906	D	D	D	7,944	9,146	9,633
Other chemicals.....	284-85,287-89	D	D	1,633	D	1,989	D	D	D	2,272	D	D
Petroleum refining and extraction.....	13,29	D	D	D	1,897	1,997	2,180	2,306	2,498	2,277	2,152	1,950
Rubber products.....	30	D	D	D	D	D	D	D	D	D	D	D
Stone, clay, and glass products.....	32	D	D	950	995	D	D	D	D	D	538	591
Primary metals.....	33	D	D	D	730	637	686	739	714	522	669	690
Ferrous metals and products.....	331-32,3398-99	D	D	D	D	253	D	D	D	D	289	D
Nonferrous metals and products.....	333-36	336	416	458	D	384	D	D	D	D	380	D
Fabricated metal products.....	34	842	829	895	783	881	904	939	974	1,017	1,158	1,111
Machinery.....	35	10,504	12,216	D	D	D	D	14,446	14,775	14,938	8,381	8,110
Office, computing, and accounting machines.....	357	D	D	D	D	D	D	D	D	D	4,950	4,106
Other machinery, except electrical.....	351-56,358-59	D	D	2,396	2,428	2,682	2,729	D	D	D	3,431	4,004
Electrical equipment.....	36	13,778	14,432	14,980	15,848	14,128	13,318	13,400	13,415	13,360	13,349	15,338
Radio and TV receiving equipment.....	365	D	D	133	139	149	96	114	D	D	D	D
Communication equipment.....	366	8,685	9,397	9,669	10,184	8,427	7,071	5,928	4,787	D	D	D
Electronic components.....	367	2,831	3,385	D	4,286	4,133	4,025	3,914	D	3,567	5,311	6,032
Other electrical equipment.....	361-64,369	D	D	D	1,239	1,419	2,126	3,444	D	D	D	D
Transportation equipment.....	37	D	D	31,275	34,246	34,775	33,859	31,361	27,428	27,494	27,258	28,087
Motor vehicles and motor vehicles equipment.....	371	6,057	6,984	D	D	D	D	D	D	D	D	D
Other transportation equipment.....	373-75,379	D	D	D	D	D	D	D	D	D	D	D
Aircraft and missiles.....	372,376	18,858	22,231	21,050	24,458	24,168	22,331	20,635	16,629	17,158	15,056	14,260

See explanatory information and SOURCE at end of table.

Table C-29. Total (company, Federal, and other) funds for industrial R&D performance, by industry and size of company: 1984-94

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Millions of current dollars												
Professional and scientific instruments.....	38	4,602	5,013	5,103	5,222	5,530	5,992	7,055	8,705	9,542	10,119	11,441
Scientific and mechanical measuring instruments.....	381-82	D	D	D	D	1,959	2,366	3,346	D	5,156	5,681	6,952
Optical, surgical, photographic, and other instruments.....	384-87	D	D	D	D	3,571	3,626	3,709	D	4,386	4,438	4,489
Other manufacturing industries	27,31,39	D	D	382	D	D	D	D	D	660	D	D
Nonmanufacturing industries 1/.....		4,905	6,714	7,446	7,844	10,513	14,031	20,793	28,446	28,933	30,831	28,846
Distribution by size of company (number of employees) total.....		74,800	84,239	87,823	92,155	97,015	102,055	109,727	116,952	119,110	117,400	119,595
Fewer than 500		4,402	5,866	7,071	7,163	S	7,809	S	13,172	13,557	14,620	13,966
500 to 999		1,439	1,648	1,902	1,725	1,669	1,825	2,154	8,000	7,958	3,230	3,608
1,000 to 4,999.....		5,520	6,240	7,472	7,262	7,622	7,881	8,411	10,453	11,886	13,334	14,617
5,000 to 9,999.....		3,251	4,022	4,251	4,501	5,245	5,756	6,746	8,049	8,258	9,135	8,912
10,000 to 24,999.....		11,351	11,109	10,493	12,043	11,506	10,450	12,486	15,770	15,744	15,421	15,972
25,000 or more.....		48,837	55,354	56,991	59,461	63,694	68,335	71,030	61,508	61,707	61,659	62,519

1/ Nonmanufacturing industries for 1991 and later years included SICs: 07-10, 12-17, 40-42, 44-65, 67, 701, 73, 75-76, 78-81, 83-84, 87 and 89.

Nonmanufacturing industries for 1990 and prior years included SICs: 10-11, 14-17, 40-42, 44-51, 53-54, 56, 60, 62-63, 72-73, 78, 806-07, and 87.

KEY: D = Data have been withheld to avoid disclosing operations of individual companies.
 S = Indicates imputation of more than 50 percent. For years prior to 1993, data have been withheld.
 SIC = standard industrial classification

NOTES: As a result of a new sample design, statistics for 1988-1991 have been revised since originally published. These statistics now better reflect R&D performance among firms in the nonmanufacturing industries and small firms in all industries. See Appendix A for more information. Industry R&D data are subject to future revisions. See Appendix A: Technical Notes.

SOURCE: National Science Foundation/SRS, Survey of Industrial Research and Development: 1994

Table C-30. Company and other (except Federal) funds for industrial R&D performance, by industry and size of company: 1984-94

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Millions of current dollars												
Total.....		51,404	57,043	59,932	61,403	66,672	73,501	81,602	90,580	94,388	94,591	97,131
Food, kindred, and tobacco products	20,21	1,081	1,136	1,280	1,204	1,173	1,244	1,248	1,277	1,386	1,345	1,476
Textiles and apparel.....	22,23	182	218	246	243	215	S	260	236	261	286	316
Lumber, wood products, and furniture.....	24,25	143	147	144	137	165	192	216	200	234	196	201
Paper and allied products.....	26	594	576	538	604	752	879	1,059	1,174	1,182	1,191	1,263
Chemicals and allied products.....	28	7,736	8,310	8,664	9,445	10,828	11,943	13,168	14,439	15,091	16,658	16,559
Industrial chemicals.....	281-82,286	3,057	3,281	3,374	3,531	3,939	4,340	4,902	5,225	4,911	5,165	4,780
Drugs and medicines.....	283	3,310	3,481	3,657	4,095	4,900	5,512	5,917	6,947	7,934	9,132	9,625
Other chemicals.....	284-85,287-89	1,369	1,548	1,633	1,819	1,989	2,091	2,349	2,267	2,246	2,361	2,154
Petroleum refining and extraction.....	13,29	2,245	2,194	1,971	1,883	1,975	2,162	2,289	2,487	2,268	2,138	1,939
Rubber products.....	30	671	659	655	596	718	867	1,056	D	1,256	1,059	1,432
Stone, clay, and glass products.....	32	705	825	941	985	697	615	538	455	479	529	553
Primary metals.....	33	683	730	786	711	620	666	717	706	514	646	672
Ferrous metals and products.....	331-32,3398-99	357	323	336	249	252	244	231	225	221	272	241
Nonferrous metals and products.....	333-36	326	407	450	462	368	422	486	481	293	374	431
Fabricated metal products.....	34	773	780	800	633	718	726	736	748	723	936	868
Machinery.....	35	9,312	10,721	10,701	10,577	11,929	13,342	13,575	13,720	13,903	8,295	8,011
Office, computing, and accounting machines.....	357	7,011	8,418	8,380	8,193	9,347	10,725	10,988	10,419	10,614	4,917	4,078
Other machinery, except electrical.....	351-56,358-59	2,301	2,303	2,321	2,384	2,582	2,618	2,587	3,301	3,289	3,378	3,933
Electrical equipment.....	36	9,037	9,271	9,767	10,449	9,975	9,575	9,267	8,865	9,516	11,682	13,537
Radio and TV receiving equipment.....	365	362	350	133	139	149	96	114	D	93	87	64
Communication equipment.....	366	5,147	5,174	5,117	5,455	4,798	4,159	3,584	S	3,381	3,954	4,939
Electronic components.....	367	2,354	2,826	3,357	3,630	3,684	3,655	3,496	3,177	3,320	5,105	5,870
Other electrical equipment.....	361-64,369	1,174	921	1,160	1,225	1,345	1,664	2,073	D	2,722	2,537	2,664
Transportation equipment.....	37	10,406	12,092	13,567	13,462	13,910	14,596	14,264	14,858	16,292	16,640	17,695
Motor vehicles and motor vehicles equipment.....	371	5,384	6,164	7,171	7,167	7,783	8,756	8,594	9,063	9,132	10,659	11,950
Other transportation equipment.....	373-75,379	258	279	330	356	361	337	283	262	289	297	279
Aircraft and missiles.....	372,376	4,764	5,649	6,066	5,939	5,766	5,503	5,387	5,533	6,871	5,684	5,466

See explanatory information and SOURCE at end of table.

Table C-30. Company and other (except Federal) funds for industrial R&D performance, by industry and size of company: 1984-94

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Millions of current dollars												
Professional and scientific instruments.....	38	4,211	4,622	4,752	4,950	5,339	5,729	6,318	6,840	7,321	7,542	8,058
Scientific and mechanical measuring instruments.....	381-82	1,671	1,596	1,521	1,598	1,863	2,205	2,696	3,017	3,013	3,196	3,687
Optical, surgical, photographic, and other instruments.....	384-87	2,540	3,026	3,231	3,352	3,476	3,524	3,621	3,823	4,308	4,346	4,371
Other manufacturing industries	27,31,39	373	361	380	380	401	438	541	D	599	758	796
Nonmanufacturing industries 1/.....		3,252	4,401	4,740	5,144	7,257	10,302	16,351	22,941	23,363	24,690	23,756
Distribution by size of company (number of employees) total.....		51,404	57,043	59,932	61,403	66,672	73,501	81,602	90,580	94,388	94,591	97,131
Fewer than 500		3,781	5,127	6,203	6,200	S	S	S	11,285	11,532	13,006	12,802
500 to 999		1,341	1,531	1,765	1,610	1,748	1,934	2,144	7,819	7,807	3,048	3,426
1,000 to 4,999.....		4,618	5,249	6,243	6,281	6,820	7,546	8,363	9,403	10,865	12,219	13,533
5,000 to 9,999.....		2,764	3,350	3,455	3,753	4,075	4,509	4,997	7,233	7,495	8,371	8,087
10,000 to 24,999.....		8,546	8,366	8,489	9,681	10,512	11,631	12,890	12,397	12,328	12,606	13,625
25,000 or more.....		30,354	33,420	33,777	33,878	36,785	40,703	45,106	42,443	44,361	45,340	45,658

1/ Nonmanufacturing industries for 1991 and later years included SICs: 07-10, 12-17, 40-42, 44-65, 67, 701, 73, 75-76, 78-81, 83-84, 87 and 89.

Nonmanufacturing industries for 1990 and prior years included SICs: 10-11, 14-17, 40-42, 44-51, 53-54, 56, 60, 62-63, 72-73, 78, 806-07, and 87.

KEY: D = Data have been withheld to avoid disclosing operations of individual companies.
 S = Indicates imputation of more than 50 percent. For years prior to 1993, data have been withheld.
 SIC = standard industrial classification

NOTES: Company funds include funds for industrial R&D work performed within company facilities from all sources except the Federal Government. The funds may be the companies' own or from outside organizations such as research institutions, universities and colleges, nonprofit organizations, other companies, and state governments. Company-financed R&D not performed within the company is excluded. As a result of a new sample design, statistics for 1988-1991 have been revised since originally published. These statistics now better reflect R&D performance among firms in the nonmanufacturing industries and small firms in all industries. See Appendix A for more information.

SOURCE: National Science Foundation/SRS, Survey of Industrial Research and Development: 1994

Table C-31. Federal funds for industrial R&D performance, by industry and size of company: 1984-94

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Millions of current dollars												
Total.....		23,396	27,196	27,891	30,752	30,343	28,554	28,125	26,372	24,722	22,809	22,463
Textiles and apparel.....	22,23	D	D	D	D	D	D	D	S	D	D	D
Lumber, wood products, and furniture.....	24,25	0	0	0	0	D	0	0	D	D	D	D
Paper and allied products.....	26	D	D	D	D	D	0	0	D	D	D	D
Chemicals and allied products.....	28	191	230	179	190	238	126	123	209	S	D	D
Industrial chemicals.....	281-82,286	183	217	178	185	232	111	109	165	S	D	D
Drugs and medicines.....	283	D	D	1	D	6	D	D	D	S	15	8
Other chemicals.....	284-85,287-89	D	D	0	D	0	D	D	D	S	D	D
Petroleum refining and extraction.....	13,29	D	D	D	14	22	S	S	11	9	14	10
Rubber products.....	30	D	D	D	D	D	D	D	D	D	D	D
Stone, clay, and glass products.....	32	D	D	9	10	D	D	D	D	D	9	38
Primary metals.....	33	D	D	D	19	17	22	D	8	S	23	17
Ferrous metals and products.....	331-32,3398-99	D	D	D	D	1	D	D	1	D	17	D
Nonferrous metals and products.....	333-36	10	9	8	D	16	D	D	7	D	6	D
Fabricated metal products.....	34	69	49	95	150	163	178	203	226	294	222	243
Machinery.....	35	1,192	1,495	D	D	D	D	871	1,055	1,035	86	99
Office, computing, and accounting machines.....	357	D	D	D	D	D	D	D	D	D	33	28
Other machinery, except electrical.....	351-56,358-59	D	D	75	44	101	112	D	D	D	53	71
Electrical equipment.....	36	4,741	5,161	5,213	5,399	4,153	3,743	4,133	4,550	3,844	1,667	1,801
Radio and TV receiving equipment.....	365	D	D	0	0	0	0	0	0	D	D	D
Communication equipment.....	366	3,538	4,223	4,552	4,729	3,630	2,911	2,344	D	D	D	D
Electronic components.....	367	477	559	D	656	449	369	418	D	247	206	162
Other electrical equipment.....	361-64,369	D	D	D	14	74	463	1,371	D	D	D	D
Transportation equipment.....	37	D	D	17,708	20,784	20,865	19,262	17,097	12,570	11,202	10,617	10,392
Motor vehicles and motor vehicles equipment.....	371	673	820	D	D	D	D	D	D	D	D	D
Other transportation equipment.....	373-75,379	D	D	D	D	D	D	D	D	D	D	D
Aircraft and missiles.....	372,376	14,094	16,582	14,984	18,519	18,402	16,828	15,248	11,096	S	9,372	8,794

See explanatory information and SOURCE at end of table.

Table C-31. Federal funds for industrial R&D performance, by industry and size of company: 1984-94

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Millions of current dollars												
Professional and scientific instruments.....	38	391	391	351	272	191	263	737	1,865	2,221	2,577	3,384
Scientific and mechanical measuring instruments.....	381-82	D	D	D	D	S	S	S	D	2,143	2,484	3,266
Optical, surgical, photographic, and other instruments.....	384-87	D	D	D	D	95	101	87	D	78	92	118
Other manufacturing industries	27,31,39	D	D	2	D	D	D	D	D	61	D	D
Nonmanufacturing industries 1/.....		1,653	2,313	2,706	2,700	3,256	3,729	4,442	5,505	5,570	6,140	5,090
Distribution by size of company (number of employees) total.....		23,396	27,196	27,891	30,752	30,343	28,554	28,125	26,372	24,722	22,809	22,463
Fewer than 500		621	739	868	963	816	901	895	1,887	2,025	1,614	1,164
500 to 999		98	117	137	115	131	117	S	181	151	182	182
1,000 to 4,999.....		902	991	1,229	981	1,093	958	881	1,050	S	1,115	1,083
5,000 to 9,999.....		487	672	796	748	864	740	257	816	763	764	825
10,000 to 24,999.....		2,805	2,743	2,004	2,362	1,705	1,129	1,526	3,373	3,416	2,816	2,348
25,000 or more.....		18,483	21,934	23,213	25,583	25,734	24,709	24,436	19,065	17,346	16,319	16,862

1/ Nonmanufacturing industries for 1991 and later years included SICs: 07-10, 12-17, 40-42, 44-65, 67, 701, 73, 75-76, 78-81, 83-84, 87 and 89.

Nonmanufacturing industries for 1990 and prior years included SICs: 10-11, 14-17, 40-42, 44-51, 53-54, 56, 60, 62-63, 72-73, 78, 806-07, and 87.

KEY: D = Data have been withheld to avoid disclosing operations of individual companies.
 S = Indicates imputation of more than 50 percent. For years prior to 1993, data have been withheld.
 SIC = standard industrial classification

NOTES: As a result of a new sample design, statistics for 1988-1991 have been revised since originally published. These statistics now better reflect R&D performance among firms in the nonmanufacturing industries and small firms in all industries. See Appendix A for more information. Industry R&D data are subject to future revisions. See Appendix A: Technical Notes.

SOURCE: National Science Foundation/SRS, Survey of Industrial Research and Development: 1994

Table C-32. Total R&D funds as a percent of net sales in R&D-performing manufacturing companies: 1984-94

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
		Percent										
Total.....		3.9%	4.4%	4.7%	4.6%	4.5%	4.3%	4.2%	4.2%	4.2%	3.8%	3.6%
Food, kindred, and tobacco products	20,21	D	D	D	0.6	D	D	D	0.5	0.5	0.5	0.5
Textiles and apparel.....	22,23	D	D	D	D	D	D	D	D	0.6	D	D
Lumber, wood products, and furniture.....	24,25	0.7	0.8	0.6	0.6	D	0.6	0.6	D	D	D	D
Paper and allied products.....	26	D	D	D	D	D	0.8	1.0	1.1	D	D	D
Chemicals and allied products.....	28	4.7	5.0	5.2	5.3	5.3	5.4	5.3	5.4	5.5	D	D
Industrial chemicals.....	281-82,286	4.0	4.4	4.6	4.7	4.4	4.2	4.5	4.6	4.6	D	D
Drugs and medicines.....	283	D	D	8.5	D	8.8	D	D	8.9	9.6	12.5	10.2
Other chemicals.....	284-85,287-89	D	D	3.3	D	3.4	D	D	3.1	2.7	D	D
Petroleum refining and extraction.....	13,29	D	D	D	1.0	1.0	0.9	0.9	1.0	0.9	0.9	0.8
Rubber products.....	30	D	D	D	D	D	D	D	D	D	D	D
Stone, clay, and glass products.....	32	D	D	2.5	2.6	D	D	D	D	D	1.5	1.7
Primary metals.....	33	D	D	D	0.9	0.8	0.8	0.8	0.8	0.6	0.7	0.6
Ferrous metals and products.....	331-32,3398-99	D	D	D	D	0.5	D	D	D	D	0.5	D
Nonferrous metals and products.....	333-36	1.2	1.4	1.5	D	1.0	D	D	D	D	1.2	D
Fabricated metal products.....	34	1.5	1.5	1.5	1.5	1.3	1.5	1.4	1.5	1.5	1.4	1.2
Machinery.....	35	6.4	7.6	D	D	7.7	7.9	7.7	8.1	7.8	4.6	3.8
Office, computing, and accounting machines.....	357	D	D	D	D	D	D	D	D	D	9.9	7.9
Other machinery, except electrical.....	351-56,358-59	D	D	3.0	3.0	2.9	D	D	D	D	2.6	2.5
Electrical equipment.....	36	6.8	7.6	7.9	8.2	7.5	7.3	6.5	6.5	5.6	6.2	5.9
Radio and TV receiving equipment.....	365	D	D	3.6	3.2	2.4	1.8	1.6	D	D	D	D
Communication equipment.....	366	9.8	10.1	9.9	10.2	10.7	11.6	10.0	D	D	D	D
Electronic components.....	367	7.8	9.6	D	10.0	9.0	D	8.3	7.9	7.5	8.1	7.5
Other electrical equipment.....	361-64,369	D	D	D	2.7	2.5	D	3.7	D	D	D	D
Transportation equipment.....	37	D	D	8.3	8.7	8.9	8.1	7.5	7.3	7.1	6.4	5.9
Motor vehicles and motor vehicles equipment.....	371	3.4	3.8	D	D	D	D	D	D	D	D	D
Other transportation equipment.....	373-75,379	D	D	D	D	D	D	D	D	D	D	D
Aircraft and missiles.....	372,376	15.4	14.9	13.4	14.7	16.3	13.5	11.8	12.1	11.8	12.5	13.8
Professional and scientific instruments.....	38	8.3	8.9	8.8	7.9	7.4	7.2	8.0	9.1	9.4	9.7	9.2
Scientific and mechanical measuring instruments.....	381-82	D	D	D	D	7.9	7.4	8.6	10.0	10.6	11.5	11.0
Optical, surgical, photographic, and other instruments.....	384-87	D	D	D	D	7.3	7.3	7.7	8.1	8.3	8.1	7.3
Other manufacturing industries	27,31,39	D	D	1.2	D	D	D	D	D	D	D	D

See explanatory information and SOURCE at end of table.

Table C-32. Total R&D funds as a percent of net sales in R&D-performing manufacturing companies: 1984-94

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
		Percent										
Distribution by size of company (number of employees) total.....		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fewer than 500		2.9	3.6	4.1	3.9	3.7	3.6	3.4	3.3	3.4	3.7	2.6
500 to 999		2.3	2.4	2.4	2.3	1.8	1.8	1.9	2.5	2.8	2.9	2.6
1,000 to 4,999.....		2.2	2.6	2.5	2.6	2.4	2.2	2.0	2.5	2.8	2.6	2.6
5,000 to 9,999.....		1.8	1.9	2.3	2.3	2.3	2.6	2.9	3.0	2.9	2.9	2.2
10,000 to 24,999.....		3.1	3.1	3.2	3.1	3.1	2.8	2.7	3.6	3.2	2.9	2.7
25,000 or more.....		5.3	6.2	6.5	6.6	6.3	5.8	5.6	5.6	5.6	5.2	5.2

KEY: D = Data have been withheld to avoid disclosing operations of individual companies.
 SIC = standard industrial classification

NOTE: As a result of a new sample design, statistics for 1988-1991 have been revised since originally published. These statistics now better reflect R&D performance among firms in the nonmanufacturing industries and small firms in all industries. See Appendix A for more information.

SOURCE: National Science Foundation/SRS, Survey of Industrial Research and Development: 1994

Table C-33. Company and other (except Federal) R&D funds as a percent of net sales in R&D-performing manufacturing companies: 1984-94

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
percent												
Total.....		2.6%	3.0%	3.2%	3.1%	3.1%	3.1%	3.1%	3.2%	3.3%	3.1%	2.9%
Food, kindred, and tobacco products	20,21	0.4	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Textiles and apparel.....	22,23	0.5	0.5	0.5	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.6
Lumber, wood products, and furniture.....	24,25	0.7	0.8	0.6	0.6	0.6	0.6	0.6	0.9	0.9	0.7	0.6
Paper and allied products.....	26	0.8	0.8	0.7	0.6	0.8	0.8	1.0	1.1	1.0	1.1	1.0
Chemicals and allied products.....	28	4.6	4.9	5.1	5.2	5.2	5.4	5.3	5.3	5.4	6.0	5.1
Industrial chemicals.....	281-82,286	3.8	4.2	4.4	4.4	4.2	4.1	4.4	4.4	4.4	4.4	3.3
Drugs and medicines.....	283	8.2	8.0	8.4	8.7	8.8	8.9	8.8	8.9	9.6	12.5	10.2
Other chemicals.....	284-85,287-89	2.9	3.1	3.3	3.3	3.4	3.9	3.4	3.0	2.7	2.7	2.5
Petroleum refining and extraction.....	13,29	0.7	0.9	1.1	1.0	1.0	0.9	0.9	1.0	0.9	0.9	0.8
Rubber products.....	30	1.9	1.8	1.7	1.6	1.7	1.9	2.1	2.3	2.3	2.1	2.3
Stone, clay, and glass products.....	32	1.9	2.3	2.4	2.5	2.0	1.8	1.7	1.6	1.6	1.5	1.5
Primary metals.....	33	0.9	0.9	1.0	0.9	0.7	0.7	0.8	0.8	0.6	0.7	0.6
Ferrous metals and products.....	331-32,3398-99	0.6	0.5	0.7	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.3
Nonferrous metals and products.....	333-36	1.2	1.4	1.5	1.3	1.0	1.0	1.2	1.2	0.7	1.2	0.9
Fabricated metal products.....	34	1.4	1.4	1.4	1.2	1.1	1.2	1.1	1.2	1.1	1.1	1.0
Machinery.....	35	5.8	6.7	7.3	7.1	6.8	7.3	7.2	7.5	7.3	4.5	3.8
Office, computing, and accounting machines.....	357	10.5	12.4	12.4	12.3	11.2	13.1	14.4	14.9	13.7	9.8	7.9
Other machinery, except electrical.....	351-56,358-59	2.5	2.6	2.9	3.0	2.8	2.6	2.3	2.9	2.9	2.5	2.5
Electrical equipment.....	36	4.5	4.8	5.1	5.4	5.3	5.2	4.5	4.3	4.0	5.4	5.2
Radio and TV receiving equipment.....	365	3.7	4.3	3.6	3.2	2.4	1.8	1.6	1.0	0.6	4.0	1.0
Communication equipment.....	366	5.1	5.4	5.2	5.5	6.1	6.8	6.1	S	7.0	10.1	10.3
Electronic components.....	367	6.6	8.2	9.2	8.5	8.0	7.7	7.4	7.2	7.0	7.8	7.3
Other electrical equipment.....	361-64,369	2.2	2.0	2.2	2.6	2.3	2.3	2.2	2.2	2.1	2.3	2.1
Transportation equipment.....	37	3.3	3.4	3.6	3.4	3.5	3.5	3.4	4.0	4.2	3.9	3.7
Motor vehicles and motor vehicles equipment.....	371	3.0	3.1	3.3	3.4	3.4	3.7	3.7	4.1	4.0	3.7	3.4
Other transportation equipment.....	373-75,379	2.0	2.3	2.7	2.5	2.6	2.5	2.1	2.1	2.1	1.9	1.2
Aircraft and missiles.....	372,376	4.0	3.9	4.0	3.6	3.9	3.3	3.1	4.0	4.7	4.7	5.3
Professional and scientific instruments.....	38	7.6	8.3	8.2	7.5	7.1	6.8	7.1	7.1	7.2	7.2	6.5
Scientific and mechanical measuring instruments.....	381-82	8.3	8.4	8.4	8.1	7.6	6.9	6.9	6.3	6.2	6.4	5.8
Optical, surgical, photographic, and other instruments.....	384-87	7.3	8.1	8.0	7.2	7.1	7.1	7.5	8.0	8.2	7.9	7.2
Other manufacturing industries	27,31,39	1.1	1.0	1.2	1.1	1.0	0.9	0.9	0.8	1.3	1.3	1.1

See explanatory information and SOURCE at end of table.

Table C-33. Company and other (except Federal) R&D funds as a percent of net sales in R&D-performing manufacturing companies: 1984-94

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
		percent										
Distribution by size of company (number of employees) total.....		2.6%	3.0%	3.2%	3.1%	3.1%	3.1%	3.1%	3.2%	3.3%	3.1%	2.9%
Fewer than 500		2.8	3.4	4.0	3.8	3.7	3.5	3.3	3.2	3.2	3.6	2.5
500 to 999		2.2	2.2	2.2	2.2	1.7	1.7	1.7	2.4	2.7	2.7	2.5
1,000 to 4,999.....		2.0	2.4	2.4	2.4	2.3	2.1	1.9	2.4	2.7	2.5	2.5
5,000 to 9,999.....		1.6	1.8	2.0	2.0	2.0	2.1	2.8	2.9	2.8	2.8	2.2
10,000 to 24,999.....		2.5	2.5	2.6	2.5	2.6	2.5	2.5	3.0	2.6	2.5	2.5
25,000 or more.....		3.2	3.5	3.7	3.8	3.7	3.7	3.6	3.8	4.0	3.7	3.6

KEY: S = Indicates imputation of more than 50 percent. For years prior to 1993, data have been withheld.

SIC = standard industrial classification

NOTES: Company funds include funds for industrial R&D work performed within company facilities from all sources except the Federal Government. The funds may be the companies' own or from outside organizations such as research institutions, universities and colleges, nonprofit organizations, other companies, and state governments. Company-financed R&D not performed within the company is excluded.

As a result of a new sample design, statistics for 1988-1991 have been revised since originally published. These statistics now better reflect R&D performance among firms in the nonmanufacturing industries and small firms in all industries. See Appendix A for more information.

SOURCE: National Science Foundation/SRS, Survey of Industrial Research and Development: 1994

Table C-34. Funds for performance of basic research, applied research, and development, by industry and source of funds: 1994

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Distribution by industry	SIC code	Total			Basic			Applied			Development		
		Total	Federal	Company	Total	Federal	Company	Total	Federal	Company	Total	Federal	Company
Millions of current dollars													
Total.....		119,595	22,463	97,131	7,017	939	6,078	23,490	4,119	19,372	89,088	17,405	71,683
Food, kindred, and tobacco products	20,21	1,476	0	1,476	114	0	114	473	0	473	889	0	889
Textiles and apparel.....	22,23	D	D	316	D	D	42	D	D	47	D	D	228
Lumber, wood products, and furniture.....	24,25	D	D	201	D	D	27	D	D	43	D	D	131
Paper and allied products.....	26	D	D	1,263	D	D	211	D	D	619	433	0	433
Chemicals and allied products.....	28	D	D	16,559	2,608	9	2,599	D	D	5,386	9,186	610	8,575
Industrial chemicals.....	281-82,286	D	D	4,780	D	D	1,066	D	D	D	D	D	D
Drugs and medicines.....	283	9,633	8	9,625	D	1	D	3,333	5	3,328	D	2	D
Other chemicals.....	284-85,287-89	D	D	2,154	D	D	D	D	D	D	D	D	D
Petroleum refining and extraction.....	13,29	1,950	10	1,939	D	0	D	694	5	688	D	5	D
Rubber products.....	30	D	D	1,432	33	0	33	D	D	215	1,184	0	1,184
Stone, clay, and glass products.....	32	591	38	553	50	0	50	212	37	175	329	1	328
Primary metals.....	33	690	17	672	D	D	102	D	D	206	D	D	364
Ferrous metals and products.....	331-32,3398-99	D	D	241	D	D	19	D	D	84	D	D	138
Nonferrous metals and products.....	333-36	D	D	431	83	0	83	D	D	122	D	D	226
Fabricated metal products.....	34	1,111	243	868	D	D	78	D	D	184	833	226	606
Machinery.....	35	8,110	99	8,011	261	7	254	1,464	35	1,429	6,385	56	6,328
Office, computing, and accounting machines.....	357	4,106	28	4,078	D	D	62	D	D	713	3,316	13	3,303
Other machinery, except electrical.....	351-56,358-59	4,004	71	3,933	D	D	192	D	D	716	3,068	43	3,025
Electrical equipment.....	36	15,338	1,801	13,537	D	D	388	D	D	2,597	12,203	1,653	10,550
Radio and TV receiving equipment.....	365	D	D	64	D	D	D	D	0	D	36	1	35
Communication equipment.....	366	D	D	4,939	D	D	D	D	D	D	D	D	4,111
Electronic components.....	367	6,032	162	5,870	D	D	121	D	D	1,370	4,529	150	4,379
Other electrical equipment.....	361-64,369	D	D	2,664	D	D	118	D	D	521	D	D	2,025
Transportation equipment.....	37	28,087	10,392	17,695	244	109	136	2,044	784	1,259	25,799	9,499	16,300
Motor vehicles and motor vehicles equipment.....	371	D	D	11,950	D	D	D	D	D	D	D	D	D
Other transportation equipment.....	373-75,379	D	D	279	31	0	31	D	D	D	D	D	D
Aircraft and missiles.....	372,376	14,260	8,794	5,466	D	D	D	D	D	D	12,787	7,978	4,809

See explanatory information and SOURCE at end of table.

Table C-34. Funds for performance of basic research, applied research, and development, by industry and source of funds: 1994

Distribution by industry	SIC code	Total			Basic			Applied			Development		
		Total	Federal	Company	Total	Federal	Company	Total	Federal	Company	Total	Federal	Company
Millions of current dollars													
Professional and scientific instruments.....	38	11,441	3,384	8,058	D	D	467	2,086	299	1,787	D	D	5,803
Scientific and mechanical measuring instruments.....	381-82	6,952	3,266	3,687	D	D	197	1,409	271	1,138	D	D	2,351
Optical, surgical, photographic, and other instruments.....	384-87	4,489	118	4,371	D	D	270	677	28	649	D	D	3,452
Other manufacturing industries	27,31,39	D	D	796	D	D	93	129	0	129	D	D	574
Nonmanufacturing industries 1/.....		28,846	5,090	23,756	2,036	689	1,346	6,169	2,035	4,134	20,641	2,366	18,275

1/ Nonmanufacturing industries include SICs: 07-10, 12-17, 40-42, 44-65, 67, 701, 73, 75-76, 78-81, 83-84, 87 and 89.

KEY: D = Data have been withheld to avoid disclosing operations of individual companies.
SIC = standard industrial classification

NOTE: Industry R&D data are subject to future revisions See Appendix A: Technical Notes.

SOURCE: National Science Foundation/SRS, Survey of Industrial Research and Development: 1994

Table C-35. Number of full-time-equivalent (FTE) R&D scientists and engineers in R&D-performing companies: 1984-95

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Thousands													
Total (January).....		584.1	622.5	671	695.8	708.6	722.5	743.6	773.4	779.3	764.7	768.5	749.2
Total (Annual average).....		603.3	646.8	683.4	702.2	715.6	733	758.5	776.4	783.8	764.5	758.8	NA
Food, kindred, and tobacco products.....	20,21	7.4	S	S	S	S	S	S	9.4	9.8	9.6	10.3	9
Textiles and apparel.....	22,23	2.3	2.8	2.6	2.4	2.4	2.5	2.8	S	2.8	3.1	3.3	3.1
Lumber, wood products, and furniture.....	24,25	T	S	S	1.3	1.3	1.4	S	S	1.5	1.6	3.3	2.3
Paper and allied products.....	26	6.6	6.6	6.4	6	6.1	6.4	8.5	S	10.7	10.6	10.6	10.6
Chemicals and allied products.....	28	69.8	71.1	75.8	75.2	75.8	78.3	80.4	81.6	85.6	86.5	93.1	91.5
Industrial chemicals.....	281-82,286	25.6	23.5	24.9	S	S	S	S	S	29.9	26.4	28.8	27
Drugs and medicines.....	283	T	30.8	31.8	32.6	33	34.4	34.3	35.4	38.7	42.3	48.5	50.3
Other chemicals.....	284-85,287-89	13.4	16.7	19.1	20.2	20.3	18.8	18.9	17	17	17.8	15.8	14.2
Petroleum refining and extraction.....	13,29	13.3	13.5	10.4	9.9	9.5	10.7	11.1	11.4	11.5	11	9.7	9
Rubber products.....	30	T	S	S	S	S	S	S	S	14.8	13	9	8.8
Stone, clay, and glass products.....	32	5.6	6.6	7.5	8.6	8.6	7.6	7	6	5.3	5.1	4	4.3
Primary metals.....	33	8.4	7.1	5.7	5.5	5.6	5.5	5.2	4.6	5.1	4.6	5.1	6.7
Ferrous metals and products.....	331-32,3398-99	5.3	4.2	2.5	S	2.3	2.3	S	S	1.7	1.6	2.6	1.9
Nonferrous metals and products.....	333-36	3.1	2.9	3.2	3.4	3.3	3.3	3.3	3	S	S	2.5	4.8
Fabricated metal products.....	34	16.6	S	S	9.9	10.5	9.9	10.1	S	8.7	7.9	10.2	9.5
Machinery.....	35	87	81.7	89.7	95.8	98.4	100.4	113.3	109.7	99.3	97.4	70.4	66.3
Office, computing, and accounting machines.....	357	56.5	61.8	71.9	73.4	74.4	75	84.7	77.6	67.1	65.8	34.6	30.3
Other machinery, except electrical.....	351-56,358-59	30.5	19.9	17.8	22.4	24	25.4	28.6	32.1	32.2	31.6	35.8	35.9
Electrical equipment.....	36	113.2	113.2	117.9	130.4	132.5	122.5	105.2	95.9	91.9	89.2	96.5	105.5
Radio and TV receiving equipment.....	365	T	S	1.8	1.2	1.3	1.5	0.8	1	1	1	0.8	0.9
Communication equipment.....	366	59.3	62.2	65	71.9	73.1	58	47.1	35.8	31.2	S	36	43.3
Electronic components.....	367	T	29.2	S	43.7	44.3	42.8	S	32.6	28.4	28.9	40.1	41
Other electrical equipment.....	361-64,369	18.4	17.9	16.5	13.6	S	S	21.3	S	31.2	28.8	19.6	20.3
Transportation equipment.....	37	T	160.3	179.2	187.3	188.2	185.4	170.2	149.7	141.1	147.5	129.6	115.8
Motor vehicles and motor vehicles equipment.....	371	28.6	28.7	33.9	46.5	47.3	45.8	49.4	45.3	44.5	45.1	51	51.3
Other transportation equipment.....	373-75,379	T	S	S	S	S	S	S	S	S	S	5.8	6
Aircraft and missiles.....	372,376	111.5	130.2	144.8	136.3	136.4	134.8	115.3	100.2	92.9	97.9	72.8	58.5

See explanatory information and SOURCE at end of table.

Table C-35. Number of full-time-equivalent (FTE) R&D scientists and engineers in R&D-performing companies: 1984-95

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Thousands													
Professional and scientific instruments.....	38	T	S	S	S	S	S	S	S	S	S	100.6	90.6
Scientific and mechanical measuring instruments.....	381-82	T	S	S	S	S	S	S	S	S	S	66.4	69.2
Optical, surgical, photographic, and other instruments.....	384-87	T	19.8	24	24.6	24.9	14.5	8.1	S	S	20.8	34.2	21.4
Other manufacturing industries	27,31,39	T	S	S	6.3	6.4	5.4	5.6	S	6	5.8	15.5	7.7
Nonmanufacturing industries 1/.....		49.8	66.8	75.1	96.4	101.9	125.2	S	S	202.6	196.5	197.4	208.5
Distribution by size of company (number of employees) total.....		584.1	622.5	671	695.8	708.6	722.5	743.6	773.4	779.3	764.7	768.5	749.2
Fewer than 500		81.9	78.3	S	105.2	109	105.4	S	S	142.1	125.1	148.6	137.5
500 to 999		NA	16.5	S	18.4	19.3	18	18.6	18.6	46.2	46.1	27.9	30.1
1,000 to 4,999.....		52.6	61.6	66.7	76.4	81.9	76.1	75.4	79.3	94.2	99.3	108.9	110.9
5,000 to 9,999.....		30.1	28.5	38.9	40.5	40.2	47.3	57.2	55.1	57.6	56.4	60.3	62.2
10,000 to 24,999.....		84	89.9	88.4	92	94.5	87	73.9	90.3	99.9	102.6	90.6	91.7
25,000 or more.....		335.5	347.6	365.3	363.3	363.7	388.7	404.2	408.4	339.2	335.2	332.1	316.8

1/ Nonmanufacturing industries for 1991 and later years included SICs: 07-10, 12-17, 40-42, 44-65, 67, 701, 73, 75-76, 78-81, 83-84, 87 and 89.

Nonmanufacturing industries for 1990 and prior years included SICs: 10-11, 14-17, 40-42, 44-51, 53-54, 56, 60, 62-63, 72-73, 78, 806-07, and 87.

KEY: S = Data have been withheld because of imputation of more than 50 percent.

T = Data not separately available, but are included in total.

NA = Not available

SIC = standard industrial classification

NOTE: As a result of a new sample design, statistics for 1988-1991 have been revised since originally published. These statistics now better reflect R&D performance among firms in the nonmanufacturing industries and small firms in all industries. See Appendix A for more information.

SOURCE: National Science Foundation/SRS, Survey of Industrial Research and Development: 1994

Table C-36. Cost per R&D scientist or engineer in R&D performing companies, by industry and size of company: 1984-94

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Millions of current dollars												
Total.....		124,000	130,200	128,500	128,800	132,300	134,500	141,300	148,600	157,912	153,336	157,601
Food, kindred, and tobacco products	20,21	D	D	D	S	D	D	D	130,000	144,215	135,261	153,609
Textiles and apparel.....	22,23	D	D	D	D	D	D	D	D	D	D	D
Lumber, wood products, and furniture.....	24,25	115,400	116,300	S	S	D	S	S	D	D	D	D
Paper and allied products.....	26	D	D	D	D	D	S	S	D	D	D	D
Chemicals and allied products.....	28	112,500	116,300	117,100	125,000	139,400	149,000	159,000	167,600	183,508	D	D
Industrial chemicals.....	281-82,286	132,000	144,600	150,200	S	S	S	S	181,000	193,871	D	D
Drugs and medicines.....	283	D	D	113,600	D	142,800	D	D	D	196,631	202,607	195,145
Other chemicals.....	284-85,287-89	D	D	83,100	D	105,600	D	D	D	135,423	D	D
Petroleum refining and extraction.....	13,29	D	D	D	187,400	182,700	194,000	201,800	217,000	205,318	208,360	209,439
Rubber products.....	30	D	D	D	D	D	D	D	D	D	D	D
Stone, clay, and glass products.....	32	D	D	118,000	122,500	D	D	D	D	D	137,990	141,842
Primary metals.....	33	D	D	D	131,500	118,600	S	D	142,200	114,057	138,552	116,556
Ferrous metals and products.....	331-32,3398-99	D	D	D	D	S	D	D	D	D	138,851	D
Nonferrous metals and products.....	333-36	112,000	136,400	138,800	D	S	D	D	D	D	138,326	D
Fabricated metal products.....	34	111,600	112,900	S	76,600	88,100	S	S	115,500	123,828	129,131	113,168
Machinery.....	35	124,500	142,500	D	D	D	130,000	138,500	147,800	152,797	100,631	118,717
Office, computing, and accounting machines.....	357	D	D	D	D	D	D	D	D	D	99,564	126,476
Other machinery, except electrical.....	351-56,358-59	D	D	119,200	98,300	99,400	D	D	D	D	102,213	111,691
Electrical equipment.....	36	121,700	124,900	120,700	124,300	124,100	132,400	142,800	147,100	150,118	144,725	151,872
Radio and TV receiving equipment.....	365	D	D	88,700	97,900	124,200	103,400	113,200	D	D	D	D
Communication equipment.....	366	143,000	147,800	141,300	155,300	160,300	170,600	177,100	S	D	D	D
Electronic components.....	367	100,500	114,100	D	98,400	S	S	128,400	D	127,801	154,366	148,761
Other electrical equipment.....	361-64,369	D	D	D	S	68,500	S	S	D	D	D	D
Transportation equipment.....	37	D	D	170,700	183,400	195,600	211,700	215,700	189,400	191,274	196,777	228,881
Motor vehicles and motor vehicles equipment.....	371	211,400	223,100	D	D	D	D	D	D	D	D	D
Other transportation equipment.....	373-75,379	D	D	S	S	D	D	D	D	D	D	D
Aircraft and missiles.....	372,376	156,000	161,700	149,800	180,400	193,300	207,300	213,700	177,000	180,552	176,450	217,219

See explanatory information and SOURCE at end of table.

Table C-36. Cost per R&D scientist or engineer in R&D performing companies, by industry and size of company: 1984-94

Industry and size of company	SIC code	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Millions of current dollars												
Professional and scientific instruments.....	38	116,900	122,000	S	S	S	S	S	S	S	115,180	119,693
Scientific and mechanical measuring instruments.....	381-82	D	D	D	D	S	S	S	S	S	94,036	102,570
Optical, surgical, photographic, and other instruments.....	384-87	D	D	D	D	316,700	S	S	S	S	161,721	161,435
Other manufacturing industries	27,31,39	D	D	S	D	D	D	D	D	D	D	D
Nonmanufacturing industries 1/.....		84,100	94,600	86,800	69,100	74,900	S	S	137,400	152,411	159,188	142,125
Distribution by size of company (number of employees) total.....		124,000	130,200	128,500	128,800	132,300	134,500	141,300	148,600	157,912	153,336	157,601
Fewer than 500		55,000	S	70,600	66,800	67,100	66,200	S	103,400	111,358	106,888	85,793
500 to 999		87,200	S	103,400	92,600	S	98,200	S	178,700	176,585	87,233	138,366
1,000 to 4,999.....		96,700	97,300	106,400	91,900	100,600	101,900	91,400	119,400	127,135	128,565	139,693
5,000 to 9,999.....		111,000	119,300	108,400	102,900	100,400	102,500	110,800	150,800	148,285	156,899	152,227
10,000 to 24,999.....		130,500	124,600	122,300	132,700	143,000	127,300	135,300	167,300	156,190	160,229	182,243
25,000 or more.....		143,000	155,300	154,300	157,700	160,700	168,200	193,700	180,100	182,839	184,804	195,890

1/ Nonmanufacturing industries for 1991 and later years included SICs: 07-10, 12-17, 40-42, 44-65, 67, 701, 73, 75-76, 78-81, 83-84, 87 and 89.

Nonmanufacturing industries for 1990 and prior years included SICs: 10-11, 14-17, 40-42, 44-51, 53-54, 56, 60, 62-63, 72-73, 78, 806-07, and 87.

KEY: D = Data have been withheld to avoid disclosing operations of individual companies.
 S = Indicates imputation of more than 50 percent. For years prior to 1993, data have been withheld.
 SIC = standard industrial classification

NOTES: The number of full-time-equivalent R&D scientists and engineers used to estimate the cost per R&D scientist or engineer is the arithmetic mean of the numbers of R&D scientists and engineers reported for January in two consecutive years. This number is then divided into the total R&D expenditures of the earlier years, and the ratio is attributed to the earlier year.

As a result of a new sample design, statistics for 1988-1991 have been revised since originally published. These statistics now better reflect R&D performance among firms in the nonmanufacturing industries and small firms in all industries. See Appendix A for more information.

SOURCE: National Science Foundation/SRS, Survey of Industrial Research and Development: 1994

Table C-37. R&D expenditures at universities and colleges, by source of funds and science and engineering field: fiscal years 1987-94

Source and field	1987	1988	1989	1990	1991	1992	1993	1994
	Millions of current dollars							
Total.....	12,153	13,463	14,976	16,285	17,579	18,807	19,940	21,081
Source of Funds:								
Federal Government.....	7,343	8,193	8,990	9,636	10,232	11,090	11,956	12,661
State and local governments.....	1,023	1,106	1,223	1,324	1,473	1,491	1,559	1,562
Industry.....	790	872	995	1,128	1,205	1,280	1,361	1,430
Institutional funds.....	2,168	2,356	2,697	3,006	3,362	3,538	3,578	3,838
All other sources.....	828	935	1,071	1,191	1,307	1,409	1,486	1,590
Field:								
Engineering, total.....	1,892	2,096	2,392	2,656	2,903	3,060	3,152	3,324
Aeronautical and astronautical.....	108	123	148	163	180	196	207	218
Chemical.....	148	163	194	218	244	261	268	276
Civil.....	191	224	245	284	315	339	367	392
Electrical.....	451	509	595	663	679	703	697	725
Mechanical.....	275	304	343	391	421	451	479	494
Metallurgical and materials 1/.....	NA	NA	NA	274	304	294	304	318
Other, n.e.c.....	719	774	867	663	760	816	830	901
All sciences, total.....	10,261	11,367	12,584	13,629	14,676	15,746	16,788	17,757
Physical sciences.....	1,398	1,554	1,647	1,807	1,940	2,053	2,127	2,171
Astronomy.....	108	127	137	170	210	233	252	274
Chemistry.....	514	565	606	648	667	698	737	759
Physics.....	673	740	786	842	870	913	929	942
Other, n.e.c.....	103	122	117	147	193	209	209	196
Environmental sciences.....	839	894	1,003	1,068	1,116	1,239	1,320	1,426
Atmospheric.....	132	138	165	173	175	194	212	220
Earth sciences.....	284	294	324	354	383	412	416	458
Oceanography.....	299	333	359	377	390	428	461	459
Other, n.e.c.....	123	128	156	163	169	205	232	289
Mathematical sciences.....	177	199	215	222	230	248	272	279
Computer sciences.....	372	408	473	515	554	556	606	660
Life sciences.....	6,529	7,257	8,061	8,726	9,472	10,196	10,850	11,521
Agricultural sciences.....	1,121	1,176	1,282	1,349	1,458	1,512	1,558	1,663
Biological sciences.....	2,144	2,408	2,640	2,859	3,064	3,303	3,535	3,759
Medical sciences.....	3,000	3,377	3,819	4,154	4,546	4,964	5,324	5,634
Other, n.e.c.....	264	296	321	363	404	417	433	465

See explanatory information and SOURCE at end of table.

Table C-37. R&D expenditures at universities and colleges, by source of funds and science and engineering field: fiscal years 1987-94

Source and field	1987	1988	1989	1990	1991	1992	1993	1994
	Millions of current dollars							
Psychology.....	187	213	234	253	283	328	350	359
Social sciences.....	502	552	633	703	750	815	896	951
Economics.....	149	163	187	201	209	222	231	241
Political science.....	81	87	103	115	125	142	151	165
Sociology	95	108	119	132	156	163	183	196
Other, n.e.c.	177	194	224	255	260	288	331	348
Other sciences, n.e.c.....	256	290	318	336	331	311	366	392

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

KEY: n.e.c. = not elsewhere classified
NA = not available

NOTE: Because of rounding, figures may not add to the totals shown.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges, Fiscal Year 1994

**Table C-38. Federally financed R&D expenditures at universities and colleges,
by science and engineering field: fiscal years 1987-94**

	1987	1988	1989	1990	1991	1992	1993	1994
	Millions of current dollars							
Total	7,343	8,193	8,990	9,636	10,232	11,090	11,956	12,661
Field:								
Engineering, total.....	1,113	1,230	1,384	1,526	1,638	1,752	1,859	1,973
Aeronautical and astronautical.....	80	94	115	127	137	150	159	165
Chemical.....	77	86	101	110	118	126	140	151
Civil.....	90	102	102	117	124	144	152	158
Electrical.....	292	330	387	432	436	449	459	480
Mechanical.....	178	193	214	238	251	269	308	322
Metallurgical and materials 1/.....	NA	NA	NA	139	153	143	154	156
Other, n.e.c.....	395	425	465	362	419	470	486	539
All sciences, total.....	6,230	6,963	7,606	8,111	8,595	9,338	10,097	10,688
Physical sciences.....	1,051	1,158	1,198	1,315	1,384	1,476	1,514	1,565
Astronomy.....	71	84	88	113	135	153	159	183
Chemistry.....	368	403	422	445	448	476	502	520
Physics.....	535	580	606	652	669	700	702	724
Other, n.e.c.....	77	91	82	105	133	146	152	138
Environmental sciences.....	546	589	650	681	699	790	871	949
Atmospheric.....	109	112	129	131	129	140	160	164
Earth sciences.....	159	174	187	204	217	238	243	267
Oceanography.....	217	238	260	262	264	306	332	325
Other, n.e.c.....	60	64	75	83	89	106	136	192
Mathematical sciences.....	132	150	157	161	170	183	203	206
Computer sciences.....	257	289	324	342	372	380	422	463
Life sciences.....	3,837	4,326	4,784	5,083	5,418	5,911	6,385	6,758
Agricultural sciences.....	298	322	349	353	377	418	450	495
Biological sciences.....	1,420	1,608	1,736	1,844	1,950	2,137	2,309	2,459
Medical sciences.....	1,962	2,213	2,503	2,671	2,849	3,113	3,370	3,531
Other, n.e.c.....	158	183	196	215	242	243	257	273
Psychology.....	124	140	153	164	186	215	234	243
Social sciences.....	169	189	212	226	253	281	338	359
Economics.....	43	49	54	54	60	66	77	76
Political science.....	24	25	26	25	29	35	43	52
Sociology.....	44	48	54	60	72	82	91	97
Other, n.e.c.....	57	67	78	87	92	99	127	135
Other sciences, n.e.c.....	115	121	128	138	112	102	129	145

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

KEY: n.e.c. = not elsewhere classified
NA = not available

NOTE: Because of rounding, figures may not add to the totals shown.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges, Fiscal Year 1994

Table C-39. R&D expenditures at university-administered FFRDCs, by science and engineering field: fiscal years 1987-94

	1987	1988	1989	1990	1991	1992	1993	1994
	Millions of current dollars							
Total	4,206	4,531	4,730	4,832	5,078	5,247	5,295	5,271
Field:								
Engineering, total.....	1,547	1,614	1,643	1,708	1,789	1,804	1,713	1,691
Aeronautical and astronautical.....	132	147	145	144	156	163	159	128
Chemical.....	42	44	40	41	70	78	76	79
Civil.....	18	18	16	15	16	34	33	31
Electrical.....	550	556	569	605	639	598	534	508
Mechanical.....	571	603	628	545	488	469	417	502
Metallurgical and materials 1/.....	NA	NA	NA	86	138	147	132	64
Other, n.e.c.	234	247	244	273	282	316	362	379
All sciences, total.....	2,659	2,916	3,087	3,124	3,290	3,443	3,582	3,580
Physical sciences.....	1,660	1,717	1,828	1,825	1,917	2,010	2,209	2,189
Astronomy.....	82	118	112	112	121	138	145	173
Chemistry.....	261	275	274	261	252	268	281	273
Physics.....	1,258	1,264	1,378	1,383	1,461	1,498	1,675	1,630
Other, n.e.c.....	59	61	63	69	83	106	108	112
Environmental sciences.....	258	289	299	292	319	353	345	397
Atmospheric.....	104	91	99	103	126	149	156	184
Earth sciences.....	76	80	65	65	72	77	63	59
Oceanography.....	2	2	2	2	15	16	17	13
Other, n.e.c.....	76	116	133	122	106	111	108	140
Mathematical sciences.....	122	126	129	135	132	124	120	114
Computer sciences.....	473	622	668	686	716	700	649	619
Life sciences.....	115	124	131	142	146	191	191	190
Agricultural sciences.....	1	1	1	1	1	1	1	1
Biological sciences.....	87	92	101	113	115	139	137	114
Medical sciences	11	13	10	10	11	16	15	15
Other, n.e.c.....	17	17	18	18	18	35	38	59
Psychology.....	1	1	1	1	1	1	1	1
Social sciences.....	21	28	23	30	34	21	22	23
Economics.....	3	1	0	1	1	1	1	1
Political science.....	5	6	4	6	8	5	5	6
Sociology.....	0	0	0	0	0	0	0	0
Other, n.e.c.....	14	21	19	23	26	16	16	16
Other sciences, n.e.c.....	9	10	8	13	25	42	45	48

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

KEY: n.e.c. = not elsewhere classified
NA = not available

NOTE: Because of rounding, figures may not add to the totals shown.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges, Fiscal Year 1994

Table C-40. Revised gross domestic product and GDP implicit price deflators: 1960-99

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Year	GDP		GDP price deflator		Rates of inflation	
	Calendar year	Fiscal year	Calendar year	Fiscal year	Calendar year	Fiscal year
	Billions of current dollars		1992 = 1.000		Percent	
1960.....	526.6	518.3	0.233	0.233	--	--
1961.....	544.8	530.4	0.236	0.237	1.2	1.6
1962.....	585.2	567.3	0.239	0.239	1.3	1.0
1963.....	617.4	599.0	0.242	0.242	1.2	1.3
1964.....	663.0	639.8	0.246	0.245	1.5	1.2
1965.....	719.1	686.8	0.250	0.249	1.9	1.7
1966.....	787.8	752.7	0.257	0.255	2.8	2.2
1967.....	833.6	811.9	0.266	0.263	3.2	3.3
1968.....	910.6	868.0	0.277	0.273	4.4	3.6
1969.....	982.2	948.1	0.290	0.285	4.7	4.5
1970.....	1,035.6	1,009.4	0.306	0.300	5.3	5.3
1971.....	1,125.4	1,077.4	0.321	0.316	5.2	5.1
1972.....	1,237.3	1,177.0	0.335	0.331	4.2	4.8
1973.....	1,382.6	1,306.8	0.354	0.345	5.6	4.3
1974.....	1,496.9	1,438.1	0.385	0.370	8.9	7.1
1975.....	1,630.6	1,554.5	0.422	0.408	9.4	10.3
1976.....	1,819.0	1,730.4	0.446	0.437	5.8	7.2
1977.....	2,026.9	1,971.4	0.475	0.470	6.4	7.5
1978.....	2,291.4	2,212.6	0.509	0.503	7.3	6.9
1979.....	2,557.5	2,495.9	0.553	0.545	8.5	8.3
1980.....	2,784.2	2,718.9	0.604	0.593	9.3	8.9
1981.....	3,115.9	3,049.1	0.661	0.652	9.4	9.8
1982.....	3,242.1	3,211.3	0.702	0.698	6.3	7.1
1983.....	3,514.5	3,421.9	0.732	0.730	4.2	4.6
1984.....	3,902.4	3,812.0	0.759	0.758	3.8	3.8
1985.....	4,180.7	4,102.1	0.786	0.784	3.4	3.5
1986.....	4,422.2	4,374.3	0.806	0.806	2.6	2.8
1987.....	4,692.3	4,605.1	0.831	0.829	3.1	2.9
1988.....	5,049.6	4,953.5	0.861	0.858	3.7	3.5
1989.....	5,438.7	5,351.8	0.897	0.894	4.2	4.2
1990.....	5,743.8	5,684.5	0.936	0.932	4.4	4.2
1991.....	5,916.7	5,858.8	0.973	0.972	3.9	4.3
1992.....	6,244.4	6,143.2	1.000	1.000	2.8	2.9
1993.....	6,553.0	6,470.8	1.026	1.026	2.6	2.6
1994.....	6,935.7	6,830.4	1.050	1.050	2.3	2.3
1995.....	7,253.8	7,186.9	1.076	1.076	2.5	2.4
1996 (projected).....	7,574.4	7,484.6	1.100	1.101	2.3	2.3
1997 (projected).....	7,957.7	7,859.8	1.129	1.129	2.6	2.6
1998 (projected).....	8,366.5	8,263.5	1.160	1.160	2.8	2.7
1999 (projected).....	8,790.2	8,681.4	1.191	1.191	2.7	2.7

NOTES: Data are projected for 1996-99. Data for this table are on a postbenchmark basis, which, at this writing, are unavailable for years earlier than those shown. Comparable data in Table C-1, used in calculations for this report, are on a prebenchmark basis, beginning in 1953. (See Notes in table C-1.) Projections are from the Mid-Session Review of the 1997 Budget, July 1996, updated for recent GDP revisions.

SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis and Office of Management and Budget